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STATUS OF INTERSTATE COMPACTS FOR THE DISPOSAL OF LOW-LEVEL RADIOACTIVE WASTE

HEARING

BEFORE THE

COMMITTEE ON THE JUDICIARY
UNITED STATES SENATE

NINETY-EIGHTH CONGRESS

FIRST SESSION

ON

THE STATUS OF INTERSTATE COMPACTS FOR THE
DISPOSAL OF LOW-LEVEL RADIOACTIVE WASTE

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STATUS OF INTERSTATE COMPACTS FOR THE DISPOSAL OF LOW-LEVEL RADIOACTIVE WASTE

WEDNESDAY, MARCH 2, 1983

U.S. SENATE,
COMMITTEE ON THE JUDICIARY,
Washington, D.C.

The committee met, pursuant to notice, at 9:05 a.m., in room SD-226, Dirksen Senate Office Building, Hon. Strom Thurmond (chairman of the committee) presiding.

Also present: Senators Simpson and Specter.

Staff present: Sally Rogers, senior counsel, Committee on the Judiciary; Mark Tennant, congressional fellow, office of Senator Thurmond; Jim Curtiss, chief counsel, Nuclear Regulation Subcommittee of the Committee on Environment and Public Works; Bill Ichord, counsel, minority, Committee on the Judiciary; Jim Davenport, assistant counsel, Committee on Environment and Public Works.

OPENING STATEMENT OF CHAIRMAN STROM THURMOND

The CHAIRMAN. The committee will come to order.

I am pleased to welcome everyone to our oversight hearing today on the status of interstate compacts for the disposal of low-level radioactive waste.

As all of you here are aware, States have for a number of months been in the process of negotiating and ratifying such compacts, pursuant to Public Law 96–573, the Low-Level Radioactive Waste Policy Act of 1980. Our committee is, of course, very interested in the contents of these compacts because Congress must consent to them before they become operative.

Congressional consent in this instance is required not only by the Constitution, but also by the Low-Level Waste Policy Act itself. This committee has jurisdiction over such consent legislation because of our jurisdiction pursuant to Senate rule XXV over interstate compacts generally.

Some information regarding the history of the Policy Act may be useful in setting the stage for this hearing. In the summer of 1979, following several instances of improperly packaged waste and improper disposal, the Governors of Washington and Nevada temporarily closed their low-level waste disposal sites; and the Governor of South Carolina announced that the amount of waste accepted at the Barnwell site would be significantly reduced.

A crisis situation was averted only when the Washington and Nevada sites reopened in late 1979. By their actions, however, the Governors of these States sent a clear warning signal to other States and to the Federal Government that they would no longer shoulder the entire responsibility for disposing of wastes generated in all 50 States.

The following summer of 1980, I offered an amendment regarding low-level waste disposal to S. 2189, the comprehensive nuclear waste bill being considered on the Senate floor. My amendment, a precursor to the Policy Act, authorizes and encourages States to enter into interstate compacts for the disposal of low-level waste.

In December of that year when the House and Senate were unable to agree on provisions regarding high-level waste and spent fuel, the low-level waste provisions were split out of the larger bill and enacted into law.

Passage of Public Law 96–573 was, in my opinion, a major step forward in the low-level waste disposal area. It clearly assigned responsibility to each State for low-level waste generated within its borders and stated that such waste could be most safely and efficiently managed on a regional basis.

It authorized States to enter into compacts to establish and operate such sites and, as I indicated earlier, specifically requires subsequent congressional approval of the compacts. A fine and very important provision was the authority given to congressionally approved compacts to exclude waste from outside that compact region after January 1, 1986.

I would like to take a moment to comment on that 1986 exclusionary date. There is a substantial possibility that regions, except for those where existing sites are located, will not have sites on line by 1986. This is a situation which I intend to go into in greater depth during the morning's hearing. I would like to make clear at the outset, however, that I do not favor an extension of the 1986 date as a means of resolving this problem; nor do I favor, at this point, opening existing DOE sites for interim storage or disposal of commercial low-level waste. The Policy Act makes clear that low-level waste disposal is a State responsibility. Therefore, I believe that this interim disposal problem is more appropriately worked out among the States themselves.

I would like to thank all of our witnesses who have agreed to present testimony today. I am sure that their comments will prove extremely helpful to the committee in its consideration of the compacts.

I would ask, however, that all witnesses strictly observe the 5-minute limit on oral comments. We have a very long list of witnesses today, and there is another hearing scheduled to begin in this room following this hearing. Your written statement will, of course, be printed in full in the hearing record.

Our first witness this morning is my distinguished colleague, Senator Gorton, who represents the fine State of Washington. Is he in the room? Senator Gorton is the sponsor of S. 247, a bill giving congressional consent to the northwest compact. If he is not here, we will not wait, though, because we have a number of witnesses to hear from.

Our next witness is the Honorable John V. Evans, Governor of the State of Idaho, Chairman of the Nuclear Power Subcommittee of the National Governors Association. Governor Evans, come down and have a seat. We are glad to have you with us. You may now proceed.

STATEMENT OF HON. JOHN V. EVANS, GOVERNOR, STATE OF IDAHO

Governor EVANS. Thank you very much, Mr. Chairman. It is a great pleasure for me as the Governor of the State of Idaho, representing the National Governors Association, to be able to be with you this morning to speak to the issue of low-level waste and its disposal.

I am especially pleased to address the hearing chaired by Senator Thurmond who introduced the low-level waste policy provisions in the Senate and was instrumental in securing the passage late in the 96th Congress.

The National Governors Association endorsed adoption of that legislation and welcomes this opportunity to report on the progress the States have made in carrying out the mandates of that act. I would now like to offer a State perspective on several issues which Congress must address in the course of ratifying compacts.

Though not listed in any priority, they all represent important decisions which will significantly influence the success of the low level waste program.

Congressional ratification and timing: Let me emphasize the importance which the Governors Association places on expedited congressional consideration of low-level waste compacts. The decision by the NGA's low-level task force to select a specified exclusionary date as a forcing mechanism for compact formation was debated at length by the States. As an alternative to Federal intervention, the Governors recommended regions be empowered to exclude outside waste after a certain date.

Congressional endorsement of that concept had led to the negotiation within the past 2 years of seven compacts and the ratification by nearly a third of all of the States of individual compacts.

If the Congress defers ratification of compacts submitted for approval until other regions complete negotiations, there will be little incentive for those regions without sites to act rapidly. The prospects of developing new disposal capacity by 1986 will become even more remote.

For this reason, we encourage Congress to ratify the compacts as they are submitted.

Congressional ratification and altering of the compacts: The negotiation-ratification of compacts has proven to be a complex and lengthy process. The present versions of the compacts represent a consensus achieved among the member States by their negotiators. Many of these compacts have subsequently been ratified by State legislatures. Even the responsibilities delegated to the States in the Low-Level Policy Act and the brevity of the act itself which permits considerable latitude in formulating compacts, we suggest that Congress adopt a permissive attitude in reviewing the compacts.

If compacts differ in terms of powers and structure of regional commissions, siting mechanisms, or even definitions, Congress should determine whether the compact will work for the particular region, whether the compact promises to fulfill the intent of the law, and whether the compact is compatible with the existing regulatory framework. Major alteration of a compact by Congress will require reratification of a compact by all of the compact members. This will not only delay the implementation of the compact and the creation of the new disposal capacity, but could lead to lengthy renegotiation efforts. The States recognize congressional interest in reviewing the compacts and welcome a thorough examination of the provisions of each regional agreement.

We urge the Senate and the House Members, however, to avoid insisting on a rigid uniformity among the compacts or an unrealistic consistency with existing Federal regulation. The compacts submitted to Congress represent the product of intense discussions among the States. We trust that Congress, having reviewed the rationale offered by each region for the provisions of the compact, will find them worthy of approval.

The 1986 exclusionary date: It is legitimate to ask whether the regional compacting process can provide new disposal capacity on a timely basis. The 1986 date looms large for those regions without an active disposal site. There is no assurance that negotiations, ratifications, construction, and licensing can be completed prior to the Policy Act's deadline.

We need to realistically assess the prospects of success by 1986 and respond accordingly. The NGA recommends that compacts be ratified and that the regions explore individually and collectively methods of addressing the provision of disposal capacity after 1986.

Volume reduction, onsite storage, and interim storage sites are all possible options. Most observers feel that if Congress extends the 1986 deadline or fails to act on the compacts which are before it, the momentum which it developed to implement the Low-Level Waste Policy Act will be slowed.

Regions which have sought rapid congressional ratification of their compact to reduce the quantity of waste shipped to their site will be disheartened, and regions without sites may conclude that Congress will never impose a deadline or will periodically extend it.

Those who feel the provisions of the Low-Level Waste Policy Act should continue to be observed suggest two major State-oriented initiatives. Regions with sites must develop binding assurances to be offered to those regions which concurrently lack waste facilities which guarantee access to existing sites until new capacity is available. This access, however, should be conditioned on the siteless region meeting agreed upon, good faith milestones.

These agreements should be concluded outside the congressional ratification process to avoid States having to reratify altered compacts. States without sites must investigate options for volume reduction and onsite or interim storage, which would bridge the period between the imposition of a ceiling or the prohibition of shipping waste to other regions and the acquisition of new disposal capacity by the State's own region.

The **Chairman**. Governor, we hate to stop you at this time, but, as I stated, we have lots of witnesses. Your entire statement will go into the record and be available to all the Senators.

We deeply appreciate your presence.

Governor **Evans**. Well, we certainly appreciate the opportunity, Senator, to come here before you and your committee.

The **Chairman**. I have a few questions to propound to you. Governor, as I noted in my opening statement, there is a likelihood that new sites will not be online by 1986. You have indicated States are capable of providing for interim storage or disposal until new sites are available. What specific actions, if any, has the National Governors Association undertaken to help in resolving this problem?

Governor **Evans**. As far as specific actions, we have had several meetings of our States and representatives of the States on this particular issue of what happens if we do not complete the process of the compacts. And we will continue to have that open discussion and communication and will not place the States who do not have that capacity in a position that they cannot resolve their problems of the low level waste disposal.

The **Chairman**. Governor, you caution against major alterations of the compacts by Congress because of your concern that such action might require reratification of the compacts.

What, in your view, would constitute a major alteration? Would it include, for example, a congressional condition establishing uniform treatment of Federal waste?

Governor **Evans**. No. 1, we want to emphasize that each of the regions and their compacts have gone through rather strenuous and close negotiation to resolve the problems with each region, and we are hopeful that the Congress and the Senate does not implement and require a very rigid formation and agreements in those compacts.

And so we are going to support the effort on the part of the Congress and we will fulfill our responsibilities as States to meet the regulations that you establish.

The **Chairman**. Thank you. Governor, the northwest compact contains a provision regard the hosting of hazardous chemical waste disposal sites by the States of Oregon and Idaho. Could you explain Idaho's responsibilities pursuant to this provision and whether you believe this provision to be in keeping with congressional intent as expressed in the Policy Act?

Governor **Evans**. It essentially affirms our existing situation within the northwest compact States. It is not incompatible with the Low-Level Waste Policy Act. It applies to just the Northwest region alone, and the States are free to submit compacts to the Congress on any topic at any time; thus, the hazardous waste provision is in order.

The **Chairman**. Governor, the northwest compact states that as "to any eligible party, this compact shall become effective upon enactment into law by that party."

Is it your view that certain provisions become effective prior to congressional ratification?

Governor **Evans**. We are coordinating, even though the Congress has not ratified our compact; we are cooperating in the Northwest in working those problems out as they surface.

The **Chairman**. Governor, do you believe that any provisions of the northwest compact, if approved by Congress, authorize the promulgation of State standards that are in conflict or incompatible with Federal regulatory standards?

Governor **Evans**. There has never been any intention or plan to do any of that; we would be in complete conformity to the Federal regulations.

The **Chairman**. Governor Evans, I want to take this opportunity to express my appreciation to you for your splendid testimony, for your presence here, and for the great work which you're doing representing the Governors' Conference on these matters.

Governor **Evans**. Thank you very much, Mr. Chairman.

The **Chairman**. You are now excused. Again, we thank you for your participation.

[Material supplied follows:]

PREPARED STATEMENT OF GOVERNOR JOHN V. EVANS

MR CHAIRMAN, MEMBERS OF THE COMMITTEE:

IT IS MY PLEASURE TO APPEAR BEFORE YOU THIS MORNING. I AM ESPECIALLY PLEASED TO ADDRESS A HEARING CHAIRED BY SENATOR THURMOND WHO INTRODUCED THE LOW LEVEL WASTE POLICY PROVISIONS IN THE SENATE AND WAS INSTRUMENTAL IN SECURING THEIR PASSAGE LATE IN THE 96TH CONGRESS. THE NATIONAL GOVERNORS' ASSOCIATION ENDORSED ADOPTION OF THAT LEGISLATION AND WELCOMES THIS OPPORTUNITY TO REPORT ON THE PROGRESS STATES HAVE MADE IN CARRYING OUT THE MANDATES OF THE ACT.

AS GOVERNOR OF THE STATE OF IDAHO AND CHAIRMAN OF THE NUCLEAR POWER SUBCOMMITTEE OF THE NATIONAL GOVERNORS' ASSOCIATION, I VERY MUCH APPRECIATE THIS CHANCE TO SUBMIT TESTIMONY TO YOU ON BEHALF OF ALL THE STATES. IDAHO WAS THE FIRST STATE TO RATIFY A LOW LEVEL WASTE COMPACT, AND THE NORTHWEST COMPACT IS THE ONLY COMPACT CURRENTLY PENDING BEFORE CONGRESS. I PREVIOUSLY SERVED ON THE NGA TASK FORCE ON LOW LEVEL RADIOACTIVE WASTE DISPOSAL WHICH FORMULATED THE STATES' POLICY ON THIS ISSUE. THUS, THOUGH I HAVE A KEEN INTEREST IN EXPEDITIOUS CONGRESSIONAL CONSENT TO THE NORTHWEST COMPACT, I WISH ON THIS OCCASION TO PROVIDE AN OVERVIEW OF HOW STATES THROUGHOUT THE NATION HAVE RESPONDED TO THE REQUIREMENTS OF THE LOW LEVEL WASTE POLICY ACT. WE IN THE NORTHWEST RECOGNIZE THAT SUCCESSFUL IMPLEMENTATION OF THE POLICY ACT REQUIRES THAT ALL REGIONS MAINTAIN STEADY PROGRESS TOWARDS PROVIDING ADEQUATE DISPOSAL CAPACITY.

IN MY TESTIMONY, I WISH TO BRIEFLY REVIEW: 1) THE ORIGINS OF THE LOW LEVEL WASTE POLICY ACT AND THE STATE ROLE IN SHAPING THE LEGISLATION, 2) THE EFFORTS STATES HAVE TAKEN TO IMPLEMENT THE ACT, 3) THE IMMEDIATE TASKS AHEAD FOR STATES AND CONGRESS AND 4) HOW STATES, THROUGH THE NGA, PROPOSE TO FURTHER COMPLY WITH THE ACT. I WILL LEAVE TO REPRESENTATIVES OF INDIVIDUAL REGIONS THE TASK OF SUMMARIZING THE PROVISIONS OF EACH COMPACT AND THEIR COMPATIBILITY WITH THE ACT AND THE FEDERAL REGULATORY FRAMEWORK.

IN 1979, FOR THE FIRST TIME, LOW LEVEL WASTE WAS BROUGHT TO THE ATTENTION OF POLICYMAKERS IN MOST STATES. FOR SEVERAL DECADES TECHNICAL PERSONNEL HAD REGULATED AND MANAGED LOW LEVEL WASTE, BUT ELECTED OFFICIALS AND THEIR STAFFS HAD BEEN LARGELY UNAWARE OF THE ORIGINS AND DESTINATION OF LOW LEVEL RADIOACTIVE MATERIALS. IN THE FALL OF 1979, A SEQUENCE OF EVENTS WHICH HAS COMPELLED THE CONTINUING ATTENTION OF POLICYMAKERS IN EVERY STATE IN THE NATION.

A SERIES OF PACKAGING AND TRANSPORTATION INCIDENTS INDUCED THE GOVERNORS OF WASHINGTON, NEVADA AND SOUTH CAROLINA--THE STATES IN WHICH ACTIVE COMMERCIAL SITES WERE LOCATED--TO TAKE PROTECTIVE ACTION. TWO OF THE THREE SITES WERE TEMPORARILY CLOSED, AND THE STATE OF SOUTH CAROLINA UNDERTOOK MEASURES TO REDUCE BY HALF THE VOLUME OF WASTE ITS SITE ACCEPTED. OTHER STATES SUDDENLY REALIZED HOW DEPENDENT THEY WERE ON JUST THREE STATES TO KEEP THEIR POWER PLANTS OPERATING, THEIR HOSPITALS ACCREDITED AND THEIR INDUSTRIES FUNCTIONING.

CONGRESS TOO RECOGNIZED THE PROBLEM AND INITIALLY PROPOSED IMMEDIATE, FEDERALLY-ORIENTED ACTION. TESTIMONY BY THE THREE HOST STATE GOVERNORS IN NOVEMBER OF 1979 PREVENTED A HASTY DECISION BY CONGRESS AND ALLOWED STATES AND OTHER INTERESTED PARTIES TO EXAMINE THE LONG-NEGLECTED PROBLEM AND TO RECOMMEND ALTERNATE SOLUTIONS.

IN DECEMBER OF 1979, THE EXECUTIVE COMMITTEE OF THE NATIONAL GOVERNORS' ASSOCIATION APPOINTED AN EIGHT-MEMBER TASK FORCE, CHAIRED BY GOVERNOR BRUCE BABBITT OF ARIZONA, TO REVIEW LOW LEVEL WASTE MANAGEMENT AND TO FORMULATE STATE POLICY BY JULY OF 1980. FOLLOWING SIX MONTHS OF DILIGENT WORK BY TASK FORCE MEMBERS, THE EIGHT GOVERNORS SUBMITTED TO THE FULL GOVERNORS' ASSOCIATION A FORTY-PAGE REPORT CONTAINING SEVENTEEN RECOMMENDATIONS. THE PRINCIPAL FINDINGS WERE:

- LOW LEVEL WASTE COULD BE MANAGED MOST EFFICIENTLY, BOTH TECHNICALLY AND POLITICALLY, AT THE STATE LEVEL.

- EACH STATE SHOULD TAKE RESPONSIBILITY FOR ITS OWN WASTE.

- THE CREATION OF A REGIONAL WASTE MANAGEMENT SYSTEM BY MEANS OF INTERSTATE COMPACTS OFFERED THE BEST PROMISE OF CREATING NEW DISPOSAL CAPACITY.

- REGIONS SHOULD BE ALLOWED TO EXCLUDE WASTE GENERATED OUTSIDE THEIR BORDERS AFTER A SPECIFIED DATE.

I WOULD NOW LIKE TO OFFER A STATE PERSPECTIVE ON SEVERAL ISSUES WHICH CONGRESS MUST ADDRESS IN THE COURSE OF RATIFYING COMPACTS. THOUGH NOT LISTED IN ANY PRIORITY, THEY ALL REPRESENT IMPORTANT DECISIONS WHICH WILL SIGNIFICANTLY INFLUENCE THE SUCCESS OF THE LOW LEVEL WASTE PROGRAM.

O CONGRESSIONAL RATIFICATION: TIMING. LET ME EMPHASIZE THE IMPORTANCE WHICH THE GOVERNORS' ASSOCIATION PLACES ON EXPEDITED

CONGRESSIONAL CONSIDERATION OF LOW LEVEL WASTE COMPACTS. THE DECISION BY NGA'S LOW LEVEL WASTE TASK FORCE TO SELECT A SPECIFIED EXCLUSIONARY DATE AS A FORCING MECHANISM FOR COMPACT FORMATION WAS DEBATED AT LENGTH. AS AN ALTERNATIVE TO FEDERAL INTERVENTION, THE GOVERNORS RECOMMENDED THAT REGIONS BE EMPOWERED TO EXCLUDE OUTSIDE WASTE AFTER A CERTAIN DATE. CONGRESSIONAL ENDORSEMENT OF THAT CONCEPT HAS LED TO THE NEGOTIATION WITHIN THE PAST TWO YEARS OF SEVEN COMPACTS AND THE RATIFICATION BY NEARLY A THIRD OF ALL STATES OF INDIVIDUAL COMPACTS. IF CONGRESS DEFERS RATIFICATION OF COMPACTS SUBMITTED FOR APPROVAL UNTIL OTHER REGIONS COMPLETE NEGOTIATIONS, THERE WILL BE LITTLE INCENTIVE FOR THOSE REGIONS WITHOUT SITES TO ACT RAPIDLY, AND THE PROSPECTS OF DEVELOPING NEW DISPOSAL CAPACITY BY 1986 WILL BECOME MORE REMOTE. FOR THIS REASON WE ENCOURAGE CONGRESS TO RATIFY COMPACTS AS THEY ARE SUBMITTED.

O **CONGRESSIONAL RATIFICATION: ALTERING COMPACTS**. THE NEGOTIATION AND RATIFICATION OF COMPACTS HAS PROVEN A COMPLEX AND LENGTHY PROCESS. THE PRESENT VERSIONS OF COMPACTS REPRESENTS THE CONSENSUS ACHIEVED AMONG THE MEMBER STATES BY THEIR NEGOTIATORS. MANY OF THESE COMPACTS HAVE SUBSEQUENTLY BEEN RATIFIED BY STATE LEGISLATURES. GIVEN THE RESPONSIBILITIES DELEGATED TO STATES IN THE LOW LEVEL WASTE POLICY ACT AND THE BREVITY OF THE ACT ITSELF WHICH PERMITS CONSIDERABLE LATITUDE IN FORMULATING COMPACTS, WE SUGGEST THAT CONGRESS ADOPT A PERMISSIVE ATTITUDE IN REVIEWING COMPACTS. IF COMPACTS DIFFER IN TERMS OF THE POWERS AND STRUCTURE OF REGIONAL COMMISSIONS, SITING MECHANISMS, OR EVEN DEFINITIONS, CONGRESS SHOULD DETERMINE WHETHER THE COMPACT WILL WORK FOR THE PARTICULAR REGION, WHETHER THE COMPACT PROMISES TO FULFILL THE INTENT OF THE LAW AND WHETHER THE COMPACT IS COMPATIBLE WITH THE EXISTING REGULATORY FRAMEWORK.

MAJOR ALTERATION OF A COMPACT BY CONGRESS WILL REQUIRE RATIFICATION OF A COMPACT BY ALL COMPACT MEMBERS. THIS WILL NOT ONLY DELAY THE IMPLEMENTATION OF THE COMPACT AND THE CREATION OF NEW DISPOSAL CAPACITY, BUT COULD LEAD TO LENGTHY RENEGOTIATION EFFORTS. THE STATES RECOGNIZE CONGRESSIONAL INTEREST IN REVIEWING COMPACTS AND WELCOME A THOROUGH EXAMINATION OF THE PROVISIONS OF EACH REGIONAL AGREEMENT. WE URGE SENATE AND HOUSE MEMBERS, HOWEVER, TO AVOID INSISTING ON A RIGID UNIFORMITY AMONG COMPACTS OR AN UNREALISTIC CONSISTENCY WITH EXISTING FEDERAL REGULATIONS. THE COMPACTS SUBMITTED TO CONGRESS REPRESENT THE PRODUCT OF INTENSE DISCUSSIONS AMONG STATES. WE TRUST THAT CONGRESS HAVING REVIEWED THE RATIONALE OFFERED BY EACH REGION FOR THE PROVISIONS OF THE COMPACT WILL FIND THEM WORTHY OF APPROVAL.

O **MANAGEMENT VS. DISPOSAL**. THE SCOPE OF COMPACTS IN ADDRESSING

THE ISSUE OF MANAGEMENT AS WELL AS DISPOSAL ISSUE HAS BEEN RAISED, PARTICULARLY BY FEDERAL AGENCIES. WHILE THIS IS A LEGITIMATE DISTINCTION, IT DOES NOT CONSTITUTE IN OUR VIEW AN IMPEDIMENT TO THE RATIFICATION OF REGIONAL COMPACTS. THE LOW LEVEL WASTE POLICY ACT CHARGES STATES WITH THE RESPONSIBILITY OF DISPOSING OF COMMERCIAL LOW LEVEL WASTE GENERATED WITHIN THEIR BORDERS. REGIONS HAVE ATTEMPTED TO DEVISE SYSTEMS TO CARRY OUT THIS RESPONSIBILITY. WE CONSIDER THE CREATION OF A COMPREHENSIVE, WORKABLE SYSTEM TO DISPOSE OF LOW LEVEL WASTE A NECESSARY RESPONSE TO THE POLICY ACT. CONGRESS MIGHT LEGITIMATELY QUESTION A COMPACT WHICH NARROWLY DEALT WITH DISPOSAL, BUT FAILED TO ESTABLISH A REGIONAL STRUCTURE TO GUARANTEE IMPLEMENTATION OF DISPOSAL PROVISIONS. WE BELIEVE THE TEST OF A COMPACT ON THIS POINT SHOULD BE WHETHER THE SYSTEM CONTEMPLATED BY THE REGION WILL WORK. WHILE SPECIFIC INSTANCES OF CONFLICTS BETWEEN COMPACT AUTHORITY AND THAT OF EXISTING FEDERAL LAWS AND REGULATIONS SHOULD BE EXAMINED, NO COMPACT SHOULD BE FAULTED SIMPLY FOR ESTABLISHING A MANAGEMENT SCHEME TO ASSURE THAT DISPOSAL RESPONSIBILITIES ARE FULFILLED.

O **IMPORT/EXPORT RESTRICTIONS**. THE LOW LEVEL WASTE POLICY ACT ALLOWS REGIONS TO PROHIBIT THE IMPORTATION OF WASTE GENERATED OUTSIDE THEIR BORDERS AFTER JANUARY 1986, PROVIDED THE COMPACT HAS BEEN APPROVED BY CONGRESS. NGA ORIGINALLY PREPARED THE EXCLUSIONARY MECHANISMS AND SUPPORTS THE RETENTION OF THE 1986 DEADLINE IN ANY COMPACT RATIFIED BY CONGRESS. SOME REGIONS HAVE ALSO INCORPORATED PROHIBITIONS ON EXPORTS AS PART OF THEIR COMPACTS. THIS OPTION WAS NOT ADDRESSED IN THE LOW LEVEL WASTE POLICY ACT AND MAY BE CHALLENGED IN CONGRESS OR IN COURT.

THE PURPOSE OF THE IMPORT EXCLUSION WAS TO ALLOW REGIONS TO DEFINE THEMSELVES AND CONTROL THE QUANTITY OF WASTE ENTERING THEIR DISPOSAL SITES. IT IS EVIDENT THAT BOTH IMPORT AND EXPORT CONTROLS ARE NECESSARY FOR REGIONS TO BE ABLE TO PROJECT THE QUANTITIES AND TYPES OF WASTES SHIPPED TO THEIR FACILITIES OVER TIME. REGIONS MUST BE ABLE TO PREDICT THE WASTE STREAM WITH REASONABLE ACCURACY TO ESTABLISH THE SIZE OF THE FACILITY; THE VARIOUS FEES FOR DISPOSAL, INSURANCE, AND POST-CLOSURE; AND THE TIME FRAME FOR SITING AND CONSTRUCTING A NEW FACILITY.

AN EXPORT BAN IS NOT INCOMPATIBLE WITH THE LOW LEVEL WASTE POLICY ACT AND WOULD SERVE TO INSURE STABILITY WITHIN REGIONS, PREVENTING THE TEMPTATION OF SOME REGIONS TO OFFER "CUT RATES" TO ATTRACT BUSINESS FROM OTHER REGIONS. WE ARE AWARE THAT ALLOWING EXPORTS OFFERS THE POSSIBILITY OF SOME GENERATORS BEING ABLE TO SHOP AROUND FOR CHEAPER DISPOSAL RATES. BUT THE REGULATORY, TRANSPORTATION AND FISCAL DRAWBACKS FAR OUTWEIGH THIS SINGLE

ADVANTAGE, AND THE GOVERNORS' ASSOCIATION URGES CONGRESS TO FAVORABLY CONSIDER THE EXPORT PROHIBITION ON COMPACTS.

APPROVAL OF EXPORT PROHIBITIONS WOULD NOT PROHIBIT REGIONS FROM APPROVING INTERREGIONAL SHIPMENT OF WASTES BY MUTUAL AGREEMENT, BUT IT WILL PREVENT MANY OTHER LEGAL AND REGULATORY PROBLEMS.

O SINGLE STATE OPTION. WHILE THE LOW LEVEL WASTE POLICY ACT DOES NOT PROHIBIT STATES FROM ESTABLISHING DISPOSAL FOR THEIR OWN USE, IT DOES ENCOURAGE REGIONAL COMPACTS AND GRANTS COMPACTS ALONE THE ABILITY TO EXCLUDE WASTE GENERATED OUTSIDE THE REGION. SOME STATES HAVE CHOSEN OR HAVE FELT COMPELLED TO PURSUE A SINGLE-STATE OPTION. LEGAL QUESTIONS HAVE ARISEN AS TO WHETHER INDIVIDUAL STATES MAY EXCLUDE WASTE GENERATED OUTSIDE THEIR BORDERS. CONGRESS SHOULD CLARIFY THE INTENT OF THE ACT AND WHETHER SINGLE STATES COULD EVER AVAIL THEMSELVES OF THE EXCLUSIONARY AUTHORITY CONTAINED IN THE ACT.

O 1986 EXCLUSIONARY DATE. IT IS LEGITIMATE TO ASK WHETHER THE REGIONAL COMPACTING PROCESS CAN PROVIDE NEW DISPOSAL CAPACITY ON A TIMELY BASIS. THE 1986 DATE LOOMS LARGE FOR THOSE REGIONS WITHOUT AN ACTIVE DISPOSAL SITE. THERE IS NO ASSURANCE THAT NEGOTIATIONS, RATIFICATION, CONSTRUCTION AND LICENSING CAN BE COMPLETED PRIOR TO THE POLICY ACT'S DEADLINE. WE NEED TO REALISTICALLY ASSESS THE PROSPECTS OF SUCCESS BY 1986 AND RESPOND ACCORDINGLY. THE NGA RECOMMENDS THAT COMPACTS BE RATIFIED AND THAT THE REGIONS EXPLORE INDIVIDUALLY AND COLLECTIVELY METHODS OF ADDRESSING THE PROVISION OF DISPOSAL CAPACITY AFTER 1986. VOLUME REDUCTION, ON-SITE STORAGE, AND INTERIM STORAGE SITES ARE ALL POSSIBLE OPTIONS.

MOST OBSERVERS FEEL THAT IF CONGRESS EXTENDS THE 1986 DEADLINE OR FAILS TO ACT ON COMPACTS WHICH ARE BEFORE IT, THE MOMENTUM WHICH HAS DEVELOPED TO IMPLEMENT THE LOW LEVEL WASTE POLICY ACT WILL BE SLOWED. REGIONS WHICH HAS SOUGHT RAPID CONGRESSIONAL RATIFICATION OF THEIR COMPACT TO REDUCE THE QUANTITY OF WASTE SHIPPED TO THEIR SITE WILL BECOME DISHEARTENED, AND REGIONS WITHOUT SITES MAY CONCLUDE THAT CONGRESS WILL NEVER IMPOSE A DEADLINE OR WILL PERIODICALLY EXTEND IT.

THOSE WHO FEEL THE PROVISIONS OF THE LOW LEVEL WASTE POLICY ACT SHOULD CONTINUE TO BE OBSERVED SUGGEST TWO MAJOR STATE-ORIENTED INITIATIVES.

o REGIONS WITH SITES MUST DEVELOP BINDING ASSURANCES, TO BE OFFERED TO THOSE REGIONS WHICH CURRENTLY LACK WASTE

FACILITIES, WHICH GUARANTEE ACCESS TO EXISTING SITES UNTIL NEW CAPACITY IS AVAILABLE. THIS ACCESS, HOWEVER, SHOULD BE CONDITIONED ON THE SITELESS REGION MEETING MUTUALLY AGREED UPON GOOD FAITH MILESTONES. THESE AGREEMENTS SHOULD BE CONCLUDED OUTSIDE THE CONGRESSIONAL RATIFICATION PROCESS TO AVOID STATES HAVING TO RE-RATIFY ALTERED COMPACTS.

- STATES WITHOUT SITES MUST INVESTIGATE OPTIONS FOR VOLUME REDUCTION AND ONSITE OR INTERIM STORAGE WHICH WOULD BRIDGE THE PERIOD BETWEEN THE IMPOSITION OF A CEILING OR PROHIBITION ON SHIPPING WASTE TO OTHER REGIONS AND THE ACQUISITION OF NEW DISPOSAL CAPACITY BY THE STATE'S OWN REGION.

LET ME EMPHASIZE THAT STATES WISH TO NEGOTIATE THESE INTERREGIONAL ARRANGEMENTS AMONG THEMSELVES. IF CONGRESS ATTACHES GUARANTEES OF ACCESS OR MILESTONES CONSTITUTING GOOD FAITH EFFORTS TO COMPACTS, RE-RATIFICATION BY ALL MEMBERS' STATES WOULD BE REQUIRED WITH THE DELAYS AND COMPLICATIONS THAT WOULD ENTAIL.

THESE REPRESENT THE KEY ISSUES WHICH CONGRESS SHOULD ADDRESS IN ITS DELIBERATIONS ON LOW LEVEL WASTE COMPACTS. WE APPRECIATE THIS OPPORTUNITY TO EXPLAIN OUR VIEWS AND TO SEEK CLARIFICATION OF CONGRESSIONAL INTENT ON SEVERAL POINTS.

CONCLUSION

LET ME CONCLUDE BY ASSURING YOU OF THE CONTINUED COMMITMENT OF THE STATES AND THE NATIONAL GOVERNOR'S ASSOCIATION TO PROMOTE THE IMPLEMENTATION OF THE LOW LEVEL WASTE POLICY ACT. WE LOOK FORWARD TO WORKING COOPERATIVELY WITH CONGRESS IN RESOLVING THE ISSUES RAISED IN THIS TESTIMONY. WE WILL ALSO CONVENE THE STATES PERIODICALLY TO DISCUSS WAYS IN WHICH STATES CAN EXPEDITE THE CREATION OF NEW DISPOSAL CAPACITY.

SUCCESSFUL IMPLEMENTATION OF THE LOW LEVEL WASTE POLICY HAS IMPLICATIONS FAR BEYOND RADIOACTIVE WASTE DISPOSAL FIELD. STATES RECOMMENDED THE MAJOR PROVISIONS OF THE LOW LEVEL WASTE ACT AND SOUGHT THE RESPONSIBILITY FOR DISPOSING OF LOW LEVEL WASTE. IF STATES CAN SUCCEED IN FORMULATING AND THEN IMPLEMENTING A STRATEGY FOR RESOLVING AN INTRACTABLE NATIONAL PROBLEM SUCH AS LOW LEVEL WASTE, WE WILL HAVE SOLVED A MAJOR ISSUE, AND THE PROSPECTS FOR ADDRESSING OTHER STATE INITIATIVES THROUGH THE USE OF COMPACTS WILL HAVE BEEN ENHANCED.

The CHAIRMAN. We will now hear from a panel of compact negotiators. If you gentlemen will come around as I call your names: Dr. L. Hall Bohlinger, assistant administrator of nuclear programs, State of Louisiana; Capt. William Briner, department of radiopharmacy, Duke University; Ms. Mary Hart, office of the Governor, State of Connecticut; Mr. Leonard Slosky, office of the Governor, State of Colorado; Mr. David Stevens, office of the Governor, State of Washington; Mr. William C. Taylor, department of civil engineering, Michigan State University; Hon. Nikki Setzler, State senator, State of South Carolina.

Do you all have statements you would like to make? We will start right in the order in which I called your names. We will start from the right with you, Dr. Bohlinger.

Just a minute before you start. I see that the distinguished Senator from Washington State, Senator Slade Gorton, has now come in. I know he is busy and I do not want to hold him up.

So if you will allow me at this time, I would like to call on Senator Gorton. We would be delighted, Senator, to have you stay throughout the hearing, if you can. We will hear your testimony now, if you would like to testify at this time.

STATEMENT OF HON. SLADE GORTON, A U.S. SENATOR FROM THE STATE OF WASHINGTON

Senator GORTON. Mr. Chairman, I greatly appreciate your willingness to hear from me now. As you know only too well, we all have two or three committee meetings at the same time, and I have one in the Banking Committee, and so I would appreciate you hearing me.

The CHAIRMAN. All right. You may proceed at this time, Senator.

Senator GORTON. I thank you very, very much, Mr. Chairman. As you know, I am the prime sponsor of S. 247, but I have as cosponsors Senators Jackson, Hatfield, Baucus, Garn, Inouye, Matsunaga, Hatch, and Packwood.

S. 247 would grant the consent of Congress to the Northwest interstate compact on low level radioactive waste management. It is the first such interstate compact which has been presented to Congress for its consideration. In a sense, Mr. Chairman, I am carrying coals to Newcastle to come here before you in connection with this compact because as you well know, there is no legislative history to the provisions under which this compact was entered except your own.

It was passed in 1980; it was an amendment which you successfully placed on a nuclear waste bill in 1980, but was the only surviving part of that bill in that year. You also know because you participated so effectively in the process that a full Nuclear Waste Act did pass at the end of the last Congress.

In any event, your action in 1980 has triggered activities in all of the States of the country which are divided into seven different regions with the Northwest Region, including Idaho, Washington, Oregon, Utah, Alaska, Hawaii, Wyoming, and Montana, being the first which has passed a compact and has submitted it to Congress for its ratification. The law which was the result of your activities in 1980 dictates January 1, 1986, for the effectiveness of any provisions in compacts which would exclude out of region waste from disposal in regional low level waste repositories. That is the date which is included in S. 247.

And I must say on my own behalf and on behalf of the people whom I represent that we would feel it unreasonable at this point to extend that date. We hope that many other regions will soon have passed interstate compacts which can be before this committee and before the Congress. I know that the region which the chairman represents has the same great concern for this subject as we do in the state of Washington because Senator Thurmond's State has one of the two other potential or used sites in this respect. And in fact in many areas only his State and mine are now repository States.

So we feel that this hearing is a vitally important one. We hope that all of the necessary studies will be completed by the Senate as quickly as possible. We hope that other regions will submit compacts for ratification by the Congress promptly and during the course of this year. And of course we hope that the Congress will see fit to ratify the work of the States of the Pacific Northwest. They have negotiated their differences in the best tradition of interstate cooperation, and I believe very strongly that that work, responsible as it is, is rewarded by Congress's ratification of our compact in accordance with the policies which you, Mr. Chairman, laid out in your 1980 legislation.

The CHAIRMAN. Thank you very much, Senator. You have done a fine job on this subject, and I want to compliment you and compliment your State for sending a man like you to the Senate, who is interested in trying to protect the public in these important matters. We appreciate your presence, and we thank you for your comments.

We will now proceed with this panel. Dr. Bohlinger, you may proceed first. We will allow as much as 5 minutes, but if you can finish sooner, we can finish this hearing a little sooner. We have another hearing in this room this afternoon, and it is going to be very difficult to finish both.

If you can give us a summary of your statement your entire statement will be printed in the record.

You may proceed.

STATEMENT OF L. HALL BOHLINGER, ASSISTANT ADMINISTRATOR OF NUCLEAR PROGRAMS, STATE OF LOUISIANA, ON BEHALF OF THE CENTRAL INTERSTATE LOW-LEVEL RADIOACTIVE WASTE COMPACT GROUP

Mr. BOHLINGER. Thank you, sir.

On behalf of the Central Interstate Low-Level Radioactive Waste Compact Group, I would like to express our sincere appreciation in being afforded the opportunity to provide testimony to the committee on our regional compacting activities.

In our written testimony submitted for the record, we have included a history of the Central States compacting efforts, a discussion of the key issues raised during development of the compact, and how they were resolved in our region, and conclusions and recommendations for future action.

Additionally, we have appended a copy of the present version of our compact and a legal memo supporting inclusion of certain compact issues. At this time I would just like to bring you up to date as to the current status of the Central Interstate Compact Region.

The negotiations to develop a regional low-level waste compact began in February 1981 at the initiative of the States of Kansas and Oklahoma, and concluded with the final document being agreed to in January 1982. State conferees labored long and hard to develop a compact agreeable to all the negotiating States. Key issues were debated and resolved only after numerous drafts of the compact were considered.

Additionally, during this time, discussions were held with the U.S. Nuclear Regulatory Commission concerning the scope of the compact and the compact commission powers as they relate to compatibility with NRC authority and jurisdiction. The State conferees feel there are no conflicts existing with respect to Federal law and the intent of our compact language.

At the conclusion of the negotiating process, ten States, including Arkansas, Iowa, Kansas, Louisiana, Minnesota, Missouri, Nebraska, North Dakota, Oklahoma, and South Dakota were listed as eligible in the compact. It now appears that only five States, Arkansas, Kansas, Louisiana, Nebraska, and Oklahoma will form the Central interstate compact, the remainder having chosen to join with a different region or take no action at this time.

As of this date, the States of Arkansas, Kansas, and Louisiana have ratified the compact. The compact has been approved by the Oklahoma Senate, and House action is expected this month.

In Nebraska, the compact has been given favorable committee recommendation, and ratification is expected no later than April. It is the intent of these five States to ask the Congress to consent to the compact this year. Through passage of the National Low Level Radioactive Waste Policy Act of 1980, the Congress has dictated what State responsibility would be in the area of low-level waste management.

This congressional action presented the States with a new challenge. The challenge has been met by States in the Central Region. We have done our part in developing a system for managing low level radioactive waste. But before the States can act to implement their management system, the Congress must consent to the compact. We ask that you act quickly in order that we may take the necessary action to fulfill our responsibility. This completes my presentation, and again, thank you for allowing us the opportunity.

The CHAIRMAN. Thank you very much, Dr. Bohlinger. We will now hear from Captain Briner of Duke University.

STATEMENT OF WILLIAM H. BRINER, DEPARTMENT OF RADIOPHARMACY, DUKE UNIVERSITY, ON BEHALF OF THE SOUTHEAST INTERSTATE LOW-LEVEL RADIOACTIVE WASTE MANAGEMENT COMPACT

Mr. BRINER. Thank you, Mr. Chairman. And I too am very pleased to have the opportunity to present testimony before your committee this morning. I have been a negotiator appointed by

Governor James B. Hunt, Jr., for the State of North Carolina during the entire negotiating process for the Southeast compact.

This series of meetings led ultimately to a document of agreement among the eight States eligible for membership in the Southeast compact in September 1982. I was also appointed by Governor Hunt to the North Carolina Governor's Waste Management Board and have chaired the technical committee of that board since the inception. And one of the functions of that board is participation in low-level radioactive waste compact negotiations.

Historically, as we all know, permission to form interstate compacts for this purpose derives from Public Law 96-573, which was enacted by the 96th Congress in December 1980. Within 2 weeks of the enactment of this legislation, Governor Richard Riley hosted an exploratory meeting in Columbia, South Carolina on January 5, 1981, to explore the interest in and possibility of the formation of a compact in the Southeast area of the Nation. This meeting was attended by representatives of eight Southeastern States, and a consensus was reached that a regional facility was desirable and would be viable economically.

Over the next 20 months, there occurred numerous meetings of the representatives of interested States with active negotiations at each meeting. The compact document finally agreed to be the eight eligible States in September 1982 is, we believe, within the authority granted by the Congress, and certainly in the best interests of the citizens of the several States involved.

Approval of the compact will be sought by each of the States during the 1983 individual State legislatures—sessions of legislatures. We fully expect that the compact will be submitted for congressional approval later this year.

That the Southeast Compact will be viable economically is self-evident from the latest data available from the U.S. Department of Energy. These data indicate that nearly 30,000 cubic meters and 42,471 curies of radioactivity were sent to the three existing commercial low-level radioactive disposal sites in this country by the eight States eligible for membership in this compact during the calendar year 1981.

This represents approximately 33 percent of the total national low-level waste volume and about 15 percent of the total of national low-level radioactivity disposed at these three sites during that year.

We are hopeful that the Congress will determine that the compact is within bounds of congressional intent and in accordance with the provisions of Public Law 96-573 when it is submitted for review and approval later this year. There may be a number of issues which will arise during the congressional compact approval process. One of these relates to a date on which compacts which have been approved by the Congress and have been duly established may exercise the right to exclude waste generated outside the boundaries of these compacts. We believe that the date established by the Low-Level Waste Policy Act, that is, January 1, 1986, should not be changed.

In the event that areas of the Nation in which compacts have been formed but do not have operating disposal facilities within the compact region on that date, these compact areas should exercise options available to them for the proper management of low-level waste generated within their borders until such time as an operational disposal site is in place.

These options in order of preference are: First, plan for interim storage within the compact region.

Second, negotiate with the U.S. Department of Energy for access to Federal sites within that region for temporary storage or possible disposal.

Third, as a last resort, negotiate with another compact that has an operational site for permission to use that compact's facilities until such time as the compact without a site has established one.

In addition, in its comments on the Southeast Compact draft document, the Nuclear Regulatory Commission suggested that the introduction of low-level radioactive waste management as a concept did not fall within the provisions of Public Law 96-573.

The NRC indicated in its comments that the act specified disposal only. We find it difficult to believe that it is not the intent of Congress to provide for the safe management of low level radioactive waste, and indeed, section 2(l) of the act defines disposal to mean the isolation of radioactive waste pursuant to requirements established by NRC under applicable laws.

We believe isolation would include management methods other than disposal, such as storage for radioactive decay when feasible.

In summary, we believe that the Low-Level Radioactive Waste Policy Act represents a very intelligent and practical approach to the safe management of this waste form. In addition, in assigning the responsibility to each State to provide for disposal capacity for waste generated in that State is a very equitable solution to a national problem. Clearly, we cannot expect the three existing host States to continue to carry the burden of 47 other States any longer.

It is a good law and should not be changed. We would encourage the Congress to study carefully the compacts submitted for congressional consent, but the approval process should be accomplished as expeditiously as possible. I appreciate very much the privilege of presenting this testimony today. Although these remarks come from only one of the seven nonhost States eligible for membership in Southeast, I am confident the representatives of the other six nonhost States would take no issue with my testimony.

I will be happy to answer any questions the committee may wish to direct to me.

Thank you very much, sir.

The CHAIRMAN. Thank you very much, Captain Briner.

Next we hear from Ms. Mary Hart, office of the Governor, State of Connecticut.

STATEMENT OF MARY HART, OFFICE OF THE GOVERNOR, STATE OF CONNECTICUT, ON BEHALF OF THE COALITION OF NORTHEASTERN GOVERNORS AND THE NORTHEAST COMPACT FOR LOW-LEVEL RADIOACTIVE WASTE

Ms. HART. Thank you, Mr. Chairman.

Mr. Chairman and members of the committee and guests, I am pleased to be able to speak to you today on behalf of the Coalition of Northeastern Governors, which we call Coneg. The eight Coneg Governors joined by the Governors of Maine, Maryland, and Delaware initiated efforts to negotiate a compact for low-level waste in the Northeast.

As chairman, I want to use these few minutes to describe to you some of the provisions and issues in our draft compact. A more detailed statement including a summary and a full copy of the final draft compact is submitted for the record.

Less than 2 weeks ago, the Northeastern States completed 18 months of careful deliberations and submitted a draft low-level waste compact to the States for their consideration and review.

Since then, two States, the State of Maryland and my own State of Connecticut, have introduced the compact in their legislatures. And the Governors here at the National Governors Association meeting have reaffirmed their intent to pursue regional cooperation.

The Northeastern States generate over one-third of the total low level waste generated in the Nation, yet we have no operating disposal site. The region contains very small generators as well as 6 of the top 20 generating States.

The region is characterized by a significant number of well informed citizens, which affect active, citizen oriented legislatures. Recognizing this fact, the Coneg Governors created a policy-working group of executive and legislative officials from each State.

The compact drafting process in the Northeast has been unique in several other ways. All meetings have been open to the public with detailed and constructive input from various public and industry groups. In addition, the policy-working group benefited from technical and management advice from a technical subcommittee. We've worked closely and I believe constructively with the Nuclear Regulatory Commission and the Department of Energy through this process. Overall, we believe that this process, while lengthy, has resulted in a more realistic and workable compact which meets the needs of the Northeast region, while being fully compatible with the act.

Briefly, let me mention some of the special provisions of our compact. The compact authorizes the States to undertake a regional management as well as disposal system for low-level waste, consistent with applicable Federal and State laws and regulations.

The Northeastern States believe that the ability to provide a regional system for low-level waste disposal requires a comprehensive approach which includes all aspects of management as it relates to safe and efficient disposal. The compact prohibits the import or export of waste into or out of the region without the approval of the regional commission and the affected host State.

The Northeastern States believe that this flexible control is crucial to the rational planning and economic stability of the regional system. The compact authorizes creation of a regional fund to provide for compensation and third party damages during the institutional control period, and if no other resources are available, also during the operating period.

The fund may also be used for extraordinary cleanup costs at closed facilities under certain limited circumstances. The compact includes specific provisions for Federal court review of actions brought by or against the Commission—and that is the Commission only—to insure that legal action will not unduly delay the States in carrying out their responsibilities under the act to provide for adequate disposal capacity.

The Northeastern States have moved deliberately in developing the compact, an approach which we believe to be consistent with the complex legal, policy, and technical issues of interstate cooperation for low-level waste management.

We have demonstrated good faith with our citizens and with each other. Submittal of the compact to the States marks a major milestone, but it is just the first of several required before the Northeast has an operational regional facility.

Our legislative traditions are strong, and public interest in any issue dealing with radioactive materials makes certain that the compact will receive close scrutiny as each sorts out and determines the disposal options best suited to its interests.

An open and deliberative legislative review of the draft compact will in the long run strengthen the effectiveness of a regional system in the Northeast. Since the compact has been introduced in only States at this time, any conjectures as to a timetable for State ratification is premature.

However, we believe the majority of the initially eligible States will be able to meet the January 30, 1984, date which is included in our compact. The 1986 exclusionary date in the act is fast approaching. The Northeast States understand the concerns of South Carolina, Washington, and Nevada, that they not continue to bear the burden of disposing of the Nation's low-level waste.

However, realism also requires recognition that regions without a disposal site begin the compacting process at a different starting point.

The Northeastern States have shown good faith and expect to continue progress toward regional cooperation. The region supports maintaining the 1986 date of the act with the understanding that interim, interregional agreements and other arrangements will be essential to avoid major disruption to the safe and efficient management of over one-third of the Nation's low-level waste.

I thank you, Mr. Chairman, again for this opportunity to testify before you today, and I will be happy to answer questions at the appropriate time.

The CHAIRMAN. Thank you very much.

We will now be pleased to hear from Mr. Leonard Slosky, office of the Governor, State of Colorado.

STATEMENT OF LEONARD C. SLOSKY, OFFICE OF THE GOVERNOR, STATE OF COLORADO, ON BEHALF OF THE ROCKY MOUNTAIN LOW-LEVEL RADIOACTIVE WASTE COMPACT NEGOTIATION GROUP

Mr. SLOSKY. Thank you, Mr. Chairman. I welcome the opportunity to share with you the experience of the Rocky Mountain States today. The States of Arizona, Colorado, Nevada, New Mexico, Utah, and Wyoming are eligible to join the compact.

Colorado adopted the compact in May 1982. It was adopted by the Wyoming Legislature last week and is currently pending in the

New Mexico and Nevada Legislatures. I anticipate legislative approval of the compact in Nevada and New Mexico in the next month or 2, after which congressional ratification will be sought.

The principal feature of the Rocky Mountain compact is the mechanism for identifying host States. The compact requires any State which generates 20 percent or more of the waste in the region to host a facility. The compact board's authority in approving regional facilities is limited to considerations of economics and need. All facility siting and regulatory decisions continue to reside with the host State or with the NRC in case of nonagreement States. The compact does prohibit the export of waste outside the region in order to maintain the economic viability of the region's facilities.

The compact also addresses regional management issues as well as disposal. However, it is compatible with existing Federal-State regulatory framework.

The States took this approach because the low-level waste disposal problem cannot be solved in isolation from the rest of the management system in which disposal occurs. All party States are required to adopt and enforce packaging and transportation requirements.

This is a commitment by the States to adopt and enforce State and Federal requirements. It is not an attempt by the compact to challenge the preemptive authority of the Federal Government in this area.

The compact's definition of low-level waste is compatible with the intent of the Low-Level Waste Policy Act. However, the compact's definition attempts to provide greater understanding of both what low-level waste is and what it is not. All waste generated by Federal Government, defense, research, and development activities is excluded from the compact.

We believe the Congress intended to exclude defense waste from coverage by the compact regardless of whether it is produced by the Department of Energy or the Department of Defense.

The compact excludes waste containing more than a specified amount of transuranics. The negotiators were faced with the dilemma either specifying a limit and thus assuring a stable definition, or incorporating by reference the Federal definition and opening the regional site to accepting whatever transuranic material NRC may define as low level waste.

The Rocky Mountain States were unwilling to adopt—and, in fact, at least one State was constitutionally prohibited from adopting—by reference a definition beyond the States' authority to control.

As you may know, a private firm is currently in the process of identifying a site in Colorado for a new low-level waste disposal facility. Particularly because of this, prompt congressional ratification of the compacts is critical to the successful conclusion of this exemplary Federal-State partnership.

Any discussion of extending the 1986 date for regional exclusivity at this time would cause the Rocky Mountain region to hesitate in establishing a new disposal facility. The infant compact regions have already initiated interregional discussions aimed at insuring that no compact region which is actively pursuing a disposal facility will find itself without adequate capacity in 1986.

I am very hopeful that these discussions will be successful. While there is unquestionably the need for overall national compatibility, I would also caution Congress in making changes to the compacts which would necessitate resubmission of them to the State legislatures.

Thank you very much.

The CHAIRMAN. Thank you very much, Mr. Slosky.

Mr. David Stevens, office of the Governor of the State of Washington.

STATEMENT OF DAVID W. STEVENS, OFFICE OF THE GOVERNOR, STATE OF WASHINGTON, AND CHAIRMAN, NORTHWEST INTERSTATE COMPACT ON LOW-LEVEL RADIOACTIVE WASTE MANAGEMENT

Mr. STEVENS. Thank you, Mr. Chairman. It is a pleasure for me to be here as a representative of a host State and also as the designated chairman of the low-level waste committee for the Northwest compact.

Before I continue, if it is in order, I would like to express our appreciation to Sally Rogers who was very helpful to us in the conduct of our national meeting held in Seattle in the latter part of last year. We found it a very good opportunity for the State representatives attending to focus on key issues. Sally was very helpful in that regard, and we did appreciate her participation.

The CHAIRMAN. I was very pleased to send her out there and that she could be helpful.

We find her to be a very competent young lady on this committee.

Mr. STEVENS. We found that to be true, Mr. Chairman.

I want to take just a few moments—you do have the full testimony on record—to give you a little idea about the status of the Northwest compact and two or three of the principal issues about which questions have been raised.

We have a compact that has been ratified by five States: Oregon, Washington, Idaho, Utah, and Hawaii, and Montana has been a participant by executive order of the Governor. Montana has now introduced legislation which passed the House of Representatives nearly unanimously a week or so ago, by a vote of 90 to 2. It is presently under consideration in the Senate. We anticipate quick passage there. And it is our understanding that the State of Alaska is ready to introduce the compact in their legislature. If both those efforts come to fruition, we will have seven of the eight eligible States that will have ratified the compact and become party members within 2 years of the first introduction of the legislation.

We do feel confident that we will have that membership in place, and it is certainly our feeling that the cooperative regional approach is proper. We do have an established compact. We have entered into our initial organization. We have had some eight or nine meetings of the compact committee.

And we now await the congressional consent. We feel the Northwest compact does meet the text of congressional intent in the direction in suggesting that States take the leadership in resolving this national problem.

The compact, however, does not intend to conflict with Federal laws or regulatory systems. We want to tuck our efforts within that overall framework.

Mr. Chairman, I would like to deal with three of the major issues which have come to our attention. First, the date of exclusivity. Ours, unlike other compacts, has a different date for potential exclusion of waste from our area. That is predicated upon a lot of activity and concern that existed in our region prior to the passage of the Federal act.

The strong desire of our citizens for an exclusionary date of mid-1981, actually, predates the adoption of the compact by some of our States, but the compact did reflect what was thought to be a reasonable date at the time it was ratified.

It is clear, however, that in order for that date to have been realized, almost immediate action by Congress would have been necessary. What appeared to have some feasibility 2 years ago as ratification took place would be difficult to achieve now.

As a host State, we feel that the January 1, 1986, date as the initial date for exclusivity would be compatible with the regional efforts underway. But we would certainly feel that any delay in that implementation date would not be appropriate and would be strongly resisted and we do appreciate the chairman's remarks in his introductory statement in that area.

Second, there has been some concern about interim regulations under our compact. While preliminary drafts of proposed regulations have been drawn and circulated, no action has been taken to start the formal rulemaking process. Governor Spellman has indicated that due to the existing regulatory program and the indemnification system which is working well, implementation of this part of the compact should await the congressional consent process.

This approach would minimize what some States have indicated is at least a statutory and perhaps a constitutional problem.

It should be noted that this compact provision would be relevant only up to the time when States can exercise congressionally derived authority to exclude out of region wastes. Assurances of adequate ongoing inspection, indemnification and other evidence of dealing with the needs of the host State, by substantially complying with the intent of this provision, would tend to minimize any need for rapid implementation of this provision.

The party States of the Northwest compact are ready to initiate the full range of regional responsibility outlined in the Federal act. At the same time we understand the complexity of the issues and the amount of work which needs to be accomplished in other regions before we have in place a system of regional compacts covering the whole country.

We feel strongly that the 1986 date established in the Federal law should continue to be the point of departure for the exercise of exclusionary authority, and any delay would be inconsistent with congressional intent. We feel it is important to provide assurances that there will be no sharp disruption of the existing system where other regions have been making good faith efforts to develop regional disposal capacity.

In other words, the abrupt implementation of exclusionary authority by one or two regional compacts without regard for the impact on other regions would simply not be appropriate. Therefore, our party States pledge their support for efforts now underway and for the development of alternatives which will enable generators to deal with their wastes.

We feel it is necessary for regions, without operating sites to begin now to develop a plan for interim storage, use of other sites within a particular region on a temporary basis, or when necessary for a temporary agreement with a compact operating a disposal site.

The willingness of our region to help will continue for those regions where measurable progress has been made.

Mr. Chairman, we are encouraged by the progress to date, and we are certainly willing to lend our cooperation and support for the remaining tasks at hand.

Thank you very much for the opportunity to be here.

The Chairman. Thank you very much.

Mr. William C. Taylor, Department of Civil Engineering, Michigan State University. Mr. Taylor.

STATEMENT OF WILLIAM C. TAYLOR, DEPARTMENT OF CIVIL ENGINEERING, MICHIGAN STATE UNIVERSITY

Mr. Taylor. Thank you, Mr. Chairman. May I also state it is a privilege to be here and to discuss this matter with the committee and the chairman. A more complete discussion of the compacting process appears in the Proceedings of the Waste Management "83" Conference, and I will only comment briefly here today.[1]

I represent a State like the New England States that does not have an operating site. And I concur with most of what has been said by the previous speakers. I particularly concur in the view that the 1986 date should be held to and should not be extended.

However, I am not as sanguine as the other speakers about the process of immediate congressional ratification. Both Mr. Slosky and Mr. Stevens have addressed the question of negotiations between those regions that have facilities and those that do not have facilities for some type of an interim agreement between the 1986 date and the likely date for a facility being available in our region, which is probably 1990.

It is important that these negotiations continue. However, in the Midwest, we will not have a compact commission formed until July of this year at the earliest, and we anticipate we will meet that date, by the way. Therefore, any formal negotiations involving the Midwest compact commissions cannot take place until this summer. Even at that time some of the States in the region will not have enacted legislation and will not do so until the next legislative session.

It seems to me that the negotiation process will work most effectively when the regions involved have some amount of equity. The only bargaining power we have at this time is that nonratification of compacts from those regions that do have sites will preclude a unilateral decision on their part to close their sites unless we agree to their terms.

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[1] The Regional LLW Compacting Process: The Midwest Experience, W. C. Taylor; Proceedings of Waste Management "83" Conference, Tucson, Ariz., March 1, 1983, can be found at p. 129.

I concur with all the speakers that the negotiated conditions will probably involve some level of interim storage within our region and an agreement for access to limited capacity in existing facilities. My recommendation would be that we negotiate this capacity on a loaned basis so as many cubic feet of space that are loaned to regions that do not have a facility between 1986 and 1990 will be repaid when facilities are opened in these regions. This will help assure the citizens in the regions with existing facilities that they are not assuming a disproportionate responsibility for waste disposal.

I think that kind of an agreement can be worked out. We have had discussions with representatives from the Southeast, the Rocky Mountain States and the Northwest, and we are convinced that they are concerned and amenable to that kind of a negotiation. However, we are not in a position to negotiate. We have several new Governors in our region, and many of the delegates that negotiated the compact are no longer representatives of their States. We need time to determine the wishes of the various new Governors; to form our commission; and to begin the negotiating process.

I would, therefore, request a 12-month postponement in ratification of any compacts until those negotiations have had an opportunity to come to fruition.

Thank you, Mr. Chairman.

The CHAIRMAN. Thank you.

Senator SETZLER of South Carolina. We are pleased to have you here. You may proceed, Senator Setzler.

STATEMENT OF HON. NIKKI G. SETZLER, STATE SENATOR, STATE OF SOUTH CAROLINA, AND MEMBER, SOUTHEAST INTERSTATE LOW-LEVEL RADIOACTIVE WASTE COMPACT COMMISSION

Senator SETZLER. Thank you, Mr. Chairman.

I appreciate this opportunity to testify on the subject of interstate compacts for low-level radioactive waste management and disposal. I am a member of the South Carolina Senate and also serve as a member of the Southeast Interstate Low-Level Radioactive Waste Compact Commission.

I am here today to offer this testimony on behalf of our commission, the South Carolina General Assembly, Governor Dick Riley of South Carolina, myself, and my fellow commissioner Dr. John J. Stucker.

In the Low-Level Radioactive Waste Policy Act of 1980, Congress took an important step in establishing a national policy to ensure the safe management of disposal of low-level radioactive waste. This policy filled a vacuum in which three States were left to bear the full burden of disposal and perpetual care of the entire Nation's low-level waste.

Since the passage of this act, States have acted responsibly and expeditiously to establish interstate compacts. These compact will provide the framework of regional cooperative carrying out the individual State responsibility defined in Public Law 96-573.

Congress currently has before it for its consent one of these compacts, the Northwest Compact. Three or four more compacts will be formally submitted to the Congress in the coming months, including our compact from the southeast. I want to urge the Congress to act expeditiously in granting consent to these compacts.

I realize that some issues may emerge out of this compacting process. Some of these issues relate to provisions of individual compacts, while other issues relate to the question of interregional relationships under nationwide low-level waste compacting regime.

With respect to provisions of individual compacts, I am confident that the member States will continue to work together so that all of these issues can be resolved to the mutual satisfaction of the Congress and the compacting States without the necessity of Congress amending the compacts.

As to the question of interregional relationships, this is also a matter with which the committee may properly be concerned, but I suggest the focus of your concern be placed quarely on maintaining the current law. In keeping with the Low-Level Radioactive Waste Policy Act of 1980, it is absolutely clear that interregional relationships should be defined as a result of negotiations among the regions themselves. For the Congress to do otherwise would be a breach of faith with those States who have moved forward under the provisions of Public Law 96-573, and would also serve as a disincentive to other States who have not carried out their responsibilities in working toward the formation of a regional compact.

Public Law 96-573 mandates State responsibility for assuring the safe management and disposal of low-level waste and encourages regional efforts to carry out this responsibility. These provisions plus the exclusionary authority authorize compacts which have received the consent of Congress are the key elements of a responsible and realistic congressional policy for low-level waste.

Congress should not consider changing the law. Congress should continue to encourage the States and regional groups to implement the law as expeditiously as possible.

If the Congress will provide that support, I believe that we in South Carolina and also my colleagues through the Southeast Compact region would within the confines of Public Law 96-573 work in good faith with other regional compact groups to insure the safe management and disposal of low level waste while we work together to carry out our responsibilities under the act.

Mr. Chairman, again let me thank you for this opportunity to address you and the committee, and I would be happy to answer any questions which you may have.

The CHAIRMAN. Thank you very much, Senator, and thank you for your presence and your excellent statement.

Now, I have a few questions here I want to propound to this panel before we move on to the next panel. I will ask this question of anyone from a nonsited region. What steps, if any, are currently being taken to address possible interim storage needs between 1986 and the date by which new sites come online?

Mr. TAYLOR. Mr. Chairman, if I may address that. In the midwest, since we do not yet have a commission, there is no activity at the regional level. However, individual States are pursuing interim storage. In the State of Michigan, our Department of Public Health is presently charged with the responsibility of developing an interim storage plan for the State. I understand this is also true of several of the other States in our region.

Without a regional body, there is no mechanism to make a regional effort toward interim storage.

The CHAIRMAN. Anyone else?

Ms. HART. Mr. Chairman, on behalf of the Northeast, we are in a similar situation. We have just finished our compact in the past 2 weeks and are moving as rapidly as possible, as I indicated already; two States have it in to their legislatures. It takes three in our region as well to begin the process of taking it to Congress and setting up our regional commission.

We would hope to do that before the end of this year and be able to move forward in that area. Each State also is looking at interim storage possibilities within their State.

The CHAIRMAN. Anyone else?

Mr. BOHLINGER. Speaking for the Central States, we are in the same situation basically. We strongly recognize the problem and hopefully we will be submitting for consent in the near future. We will then have a regional body to operate.

The CHAIRMAN. Thank you. Anyone else?

[No response.]

The CHAIRMAN. The next question is for Mr. Stevens and Senator Setzler. What are the views of Washington State and South Carolina regarding continued access to the Hanford and Barnwell sites for some period of time after 1986? And what actions would be expected of regions without sites if access to Hanford and Barnwell were to be discussed?

Senator SETZLER. Mr. Chairman, of course, in our compact the 1986 date is there. It also provides for the commission at that point in time after it is formed to deal with other regions.

We feel that if you change that date, that in essence what you would do would be two things: You would breach the faith of those States which have entered into the compacts in good faith based on the law that was passed; and also you would in essence kill some of the incentive with the other States in the regions. Our compact provides we can enter into relationships with other regions or other States by a two-thirds vote of the commission, with the affirmative vote of both members of the host State.

I think we would look to see first that those States have acted in good faith, complying with the Federal law that has been passed and have made a good faith effort to form a regional compact; not just one in word, but one in action.

Mr. STEVENS. Mr. Chairman, from the standpoint of our region and our compact, we are interested in maintaining the stability of the system. We do think that the 1986 date provides a proper incentive, and we would anticipate that if there were good faith efforts being made by other regions, there would be no reason to alter that date. But we also would feel that there would have to be a substantial amount of progress made. We do not have any final conditions. Our compact committee and certainly our governors have not come to any agreement on that, but we would think that each region would have needed to not only negotiated and adopted a compact, but hopefully that it had been submitted for congressional consent and consent had been given; and that perhaps there were also some procedural steps taken to find and license a site.

So it is a little hard to project with the rapid activity that is now being carried on within regions specifically where we would be in 1986 and specifically what the needs would be at that time. But there is a clause in our compact that allows the Northwest Region to accept waste under special conditions.

We certainly want to continue the stability of the system and provide continued access where good faith efforts have been made.

The CHAIRMAN. Thank you.

Senator SETZLER. Mr. Chairman, if I can make one more comment about that. Of course, in the Southeastern compact, one of our key elements throughout the compact is that the States share equally in the responsibility for the disposal of the waste. I think that would certainly be a key consideration in any negotiations that we had with any other region.

I think once the compact is formed and approved by Congress we have a dual responsibility not only by the State, but also of our Southeastern compact region, and the capacity of the facility there.

So I think we would have many factors at that point in time that would play into it.

The CHAIRMAN. Any other comment?

Mr. TAYLOR. If I may, sir, I think the comment of the preceeding two speakers strengthens the point I was making before, that regions with sites have not yet formulated policies in terms of what specific steps should be taken by what specific time in order to guarantee that we would have access to their facilities.

Hence, my request for some time to allow those negotiations to proceed so that we know exactly where we stand.

The CHAIRMAN. Mr. Taylor, I understand that the Midwest compact, as well as several others, contains a provision banning export of low-level waste from that region after January 1, 1986.

Is such a provision compatible with the Policy Act, and what is the justification for its inclusion in your compact?

Mr. TAYLOR. Mr. Chairman, our compact does contain that clause with the proviso that while the Commission may approve exportation of waste. The generator cannot unilaterally take that action. We believe this clause is consistent with the act, as our interpretatin of the act is that it provides for the management as well as the disposal of low level radioactive waste. This question has been raised by the Nuclear Regulatory Commission, among others, but we believe the testimony and the hearing proceedings for the bill spoke to management, not simply disposal. The rationale for including this clause is that we need to assure any State designated as a host State that there would be sufficient volume to justify the economics of hosting that facility.

One guarantee of that is that all generators within the region must ship to the designated facility. We do not want to get into a price war with some other region as to who can offer the least expensive disposal capacity, and in a sense hurt all the compacts.

Ms. HART. Mr. Chairman, if I might, on behalf of the Northeast, agree with Mr. Taylor. In that particular regard, we are in the same sort of situation as the Midwest is. And we also have an export ban, so to speak, however, with approval of the Commission.

We just think that there needs to be an assurance to the host State that the waste within the region will go to that host State for economic terms.

The **Chairman**. Thank you.

Mr. Slosky, it is my understanding the Rocky Mountain compact contains a provision excluding all Federal defense wastes from your future site, not just wastes generated by defense activities of the secretary, as specified by the Policy Act.

Is such a provision not in conflict congressional intent as expressed in the act?

Mr. **Slosky**. We do not believe it is. If you will take a look at the December 13, 1980 Congressional Record when the Low-Level Waste Policy Act was being debated on the floor of the House, the prime sponsor, Representative Udall from the State of Arizona was asked that question. He responded twice that the statute would not deal with any defense wastes whatsoever, whether it came from the Department of Energy or the Department of Defense.

It has been our understanding of congressional intent in this area that the states were given the responsibility to deal with commercially generated waste, if you will, and not to solve the Federal waste problem. That is the approach which we have taken. Again, our compact does have flexibility. If there is some certain class of Federal waste that is compatible with our site and compatible with the overall regional management system, we could allow that waste into the site.

But the basic approach was what we understood to be the intent of Congress, and that was not to burden the States with the disposal of federally generated waste.

The **Chairman**. What volume and type of defense waste is generated within your region?

Mr. **Slosky**. To my knowledge, under the Department of Defense, there is very little at the current time. Under the Department of Energy, there is quite a considerable amount with the nuclear weapons production facility located near Denver.

The attitude of the negotiators is that this compact is supposed to last for many, many years, and we needed to consider the potential for new defense activities in the West, as well as the current activities.

The **Chairman**. Now, from the legislative history on the House side, I understand the position you take. I am not quite sure, however, that that is in accord with the law as it was actually passed. I want to read to you section 3(a):

> Compacts established under this act or actions taken under such compacts shall not be applicable to the transportation, management, or disposal of low-level radioactive waste from atomic energy defense activites of the Secretary of Energy or Federal research and development activities.

I would suggest that you State representatives carefully study this language law because this is what will control, not the legislative history, if it conflicts with the act as finally passed.

Mr. **Slosky**. I am aware that the statute does not contain an explicit exclusion for DOD waste. But let me speak to the larger issue. The States were already in the process of regionalization when Congress took its action in December 1980. And the States feel, I think, quite strongly, that they need to know what they are dealing with, that they need to have control of the waste that they are responsible for disposing of.

The Rocky Mountain States would find it unacceptable to enter into a compact which one of the nonparties to the compact at some later time could claim that their waste had to be disposed of in the regional facility when at the time the compact was negotiated that waste did not exist and was not generally understood to be included in the compact.

So I think it is a larger issue that address the definition of low-level waste in general and goes beyond DOD. If the States do not know what they are dealing with and do not have control over it, I think they are going to be very hesitant to proceed with siting new facilities.

The CHAIRMAN. Mr. Stevens, I understand that a bill has recently been introduced in the Washington State Legislature which makes certain amendments to the Northwest compact. What is the status of this legislation, and what changes would it make in the present compact?

Mr. STEVENS. Mr. Chairman, we have seen the suggested changes only after they were printed in a bill. There has not been a hearing scheduled on that matter. I have read the bill. I think your inquiry might well be directed to Senator Al Williams who is a member of the legislature which follows and who is a sponsor of that bill, as I understand it.

The CHAIRMAN. Ms. Hart, I understand that one of the more difficult issues faced by the Northeast negotiators was achieving a balance of the interests of States which generate a relatively large volume of low-level waste and those generating a small volume of waste.

Has that issue been satisfactorily and finally resolved?

Ms. HART. I believe it has, Mr. Chairman. That did occupy a great deal of our time during our negotiations in the Northeast. It is very difficult when you have very small generating States like Rhode Islands and Delawares, negotiating with large generating States like Pennsylvanias and New Yorks of the world.

And so very clearly we had to strike a balance between the needs and the responsibilities and roles of all the party States involved. We feel that through criteria set forth in our article five of our compact, which you will have a copy of, we have struck that balance and been able to put together criteria that will satisfy both the large and the small generating States.

The CHAIRMAN. It is necessary for me to go and open the Senate, as President pro tempore. I will be back as soon as I can. The able Senator from Wyoming is here, Senator Simpson, who is an expert on these nuclear matters. He will preside until I get back.

I would like for him to preside even longer, if he will.

Senator Simpson [presiding]. An expert. Think of that. Actually, I am not an expert. I am authority, which is even worse. [Laughter.]

Well, I wanted to thank our good chairman and express my thanks to him for holding this hearing on the status of the interstate compacts for low-level radioactive waste disposal. It is certainly a full agenda. As some of you may know, we had in November of this last year, the committee held, I thought, a productive hearing in Seattle on the Northwest interstate compact, and the chairman asked me to chair that particular hearing.

I do work closely in this area as chairman of the Subcommittee on Nuclear Regulation of the Environment and Public Works Committee.

I think there has been good progress at the State level in all regions, and due to the leadership of the chairman, I think there is going to be good progress in the future toward achieving this objective of this nationwide system of interstate compacts for the disposal of low level waste.

I am very pleased; my own State, Wyoming, just last Monday, ratified the Rocky Mountain compact, becoming, I think, the second member State.

So we now have this statutory framework in place to insure that we have this system. And I look forward to working with the chairman on this. And certainly this is an obvious effort of grappling with it, and I look forward to working with the Chairman and the Congress as we move forward to this consideration of compacts.

I had a couple of questions of my own, and then I think the chairman had maybe—did he have a couple more questions he wished to inquire? OK.

We might take those now. And then I have a couple, and then we will go right on to the next panel. Dr. Bohlinger, please, could you briefly describe the mechanism established by the Central States compact for identification of a new disposal site and whether you believe that to be a workable approach?

Mr. **Bohlinger**. Yes, sir. That was one of the issues which took a great deal of time during the negotiations. We finally arrived at a methodology by which the commission will accept a volunteer host State. If that does not occur, the commission at that time will solicit public applications from developers to choose the most suitable site within our region, based on criteria developed by the Commission. In our viewpoint, it is a workable mechanism we look forward to entertaining proposals.

Senator **Simpson**. Have the DOE and other Federal agencies provided adequate support and technical advice to States during this process of negotiation? Anyone might respond to that. Yes, sir?

Mr. **Slosky**. I might speak to that as really I think the second region that proceeded in very quickly pulling a compact together; the support from DOE in particular was essential to the States moving rapidly; the technical expertise provided by DOE staff and their contractor, EG&G Idaho, was extremely helpful. And I would say that without that support, the timely support, that the Rocky Mountain compact would not have been negotiated and passed by the Colorado Legislature in the last session.

Senator **Simpson**. Captain Briner or Senator Setzler, what was the thrust of the changes which South Carolina made in the Southeast compact after its approval by the other State legislatures? We know that is the option always that the States hold.

Senator **Setzler**. Senator, there were a number of technical changes. Basically, there were three of substance: One, that South Carolina, it was designated as a host site where the host State would be given a veto power over new membership in the commission. It exempted South Carolina from the 4-year notice requirement for closure which had been in the compact. And it put some restrictions on the commission going to court on behalf of the State of South Carolina. There were a number of other changes that I say were basically technical in nature.

We went back to the negotiating table in July of this year—or of last year rather, in September and concluded those negotiations, have now resolved all of those issues among the eight States in the region.

The bill has been introduced in the South Carolina House of Representatives where the changes were made last year, is now on the floor, and we do not anticipate that there will be any changes. Last year the State senate made no changes; they were made on the house side.

Senator SIMPSON. One of the questions we tried to address in the Seattle hearing was this critical one of how to strike a balance between Federal and State responsibilities in the area of low-level waste regulation. I would ask anyone who would care to respond, what do you see as the role of the States under these compacts in regulating activities such as the packaging and transportation of the low-level waste?

Ms. HART. I would say that on behalf of the Northeast that it is clear that many of our States in the region were very concerned about the packaging and transportation aspects.

However, we have always indicated within the compact that whatever would be done, either by the host State or in cooperation with the party States in the compact would be under applicable Federal law.

It is very clear that there is great concern in the Northeast that packaging and transportation be handled properly, and obviously there were problems some years ago that led us all here today in those particular areas.

And so I think it is a very important area, and an area that the States in our region took very seriously, continue to take seriously, and that we have provided specifically for within the compact. I might also say that there was a great deal of discussion involved in the host State wanting to assure that they may have additional regulations that would be consistent with Federal law and regulation, but additional regulations over particularly the packaging of the materials to assure that their needs are satisfied, both for the public health and safety, and the needs of the party States.

Mr. SLOSKY. If I could speak to that also.

Senator SIMPSON. Yes, please.

Mr. SLOSKY. The view of the Rocky Mountain States is that the problem is basically one of enforcement, that the Federal standards and regulations are generally adequate. In the Rocky Mountain region, I believe, there are 5 inspectors for the 5 or 6 States that include 300 or 400 generators. And the problem has been one of inadequate resources for enforcement both at the State and the Federal level.

Our approach in the Rocky Mountain States is for the States to enter into agreements with the NRC and DOT by which State inspectors can be used to enforce the Federal regulations, as provided under Federal law.

Senator SIMPSON. Just one quick final question from me. Obviously, a purpose of all this is clear, that we are trying to—Congress is trying to obtain some idea whether these six compacts that are now under development are eventually going to work into a national system of low-level waste disposal, something comprehensive and workable.

And in your extensive discussions in your various regions and between regions now that you see that developing, are you still confident or are you confident—I will leave it either way—that we are moving in that direction? Or are there issues within these individual regions that are cropping up which look to be impediments, and serious ones, toward achieving any kind of a rational system?

You are smiling over there, you. [Laughter.]

Tell me your thoughts on that.

Mr. TAYLOR. Senator, I will give you just my opinion because that is all I can give you at this point. It appears that we are moving toward a comprehensive program. All the issues raised here today, I believe are resolvable within the law, and therefore I am convinced that we will have a workable national plan by 1986.

Senator SIMPSON. Yes, sir?

Mr. BRINER. I too agree that there will evolve a workable national scheme for this essentially national problem. The only abiding fear that I have is that, in well-intentioned zeal, there may be attempts to seriously modify Federal transportation regulations, which may lead to a patchwork approach to interstate commerce. In essence, this is what we are talking about.

And it will make for real chaos if this is allowed to exist.

Senator SIMPSON. Yes, go ahead, if you would like to respond.

Senator SETZLER. Senator, I would say on behalf of our region that we feel that the compacting process has worked and is moving forward, and I think we have shown that the States can resolve the issues that have come up in the compacting process and can continue to do so. And I think that process can work through the regional compacting process.

Senator SIMPSON. Yes, please.

Ms. HART. I feel very strongly as well in the Northeast that we have done what we could to do our part in putting together a regional framework that will help work throughout the Nation in working with other regions as well. I would make two points: One point that has been made over and over again today from those of us who sit in regions without a disposal site, and that is that there will need to be some interregional discussions. There will need to be some plans for interim storage within the region just simply because of the timeframe.

And second, I might also add an issue that I have not heard brought up today, the single State, the going it alone option is one that I know the committee will be looking at. We do not have any State right now in our region that is—has spoken openly about considering that, although some States have considered it within their State boundary. And I think that will be an area very clearly that no one is too sure that the act addresses specifically in terms of the exclusionary date and one that I think may have an impact on the whole system nationwide.

So I am sure that we will be looking to the committee and also to those States who, like Texas and California, who are talking about going it alone to see if that issue is going to be resolved because those are large generating States.

Senator SIMPSON. I thank you very much. And I appreciate your coming here and your testimony. And I appreciate, too, that general spirit of some confidence; I think that augurs well for what we are trying to do.

Thank you very much. I appreciate it.

[Material supplied follows:]

PREPARED STATEMENT OF L. HALL BOHLINGER

INTRODUCTION

The negotiations to develop a regional low-level radioactive waste compact for the central states began in February 1981 and concluded with the final document being agreed to in January 1982. State conferees were presented with a difficult task in February 1981 and labored long and hard to write a compact that was agreeable to all the negotiating states. Key issues were debated and resolved only after numerous drafts of the compact had been considered. At the end of the negotiating process ten states: Arkansas, Iowa, Kansas, Louisiana, Minnesota, Missouri, Nebraska, North Dakota, Oklahoma and South Dakota were listed as eligible for membership in the compact. It now appears five states; Arkansas, Kansas, Louisiana, Nebraska and Oklahoma will form the Central Interstate Low-Level Radioactive Waste Compact (Appendix A). It is the intent of these states to ask the Congress to consent to the compact this year.

HISTORY

In 1979 the governors of the states of Nevada, Washington and South Carolina voiced their concerns about potentially dangerous operating conditions at the low-level radioactive waste disposal facilities located in their states. In the fall of 1979 the facilities in Nevada and Washington were closed by orders of their respective governors. This facility in South Carolina was required by the state to reduce the scope of its operations. It became apparent that the governors of those three states would no longer allow their states to remain the dumping sites for the entire nation. Governor Ray of Washington, at the second meeting of the State Planning Council on Radioactive Waste Management, won approval of a motion that each state should take responsibility for the low-level radioactive waste generated within its borders. The motion called for each state either to dispose of its own waste or to enter into an agreement with other states for disposal at a multi-state regional facility.

The southern governors at their annual meeting in September 1980 resolved that "it should be the policy of the United States that each and every state is responsible for the disposal of low-level radioactive waste generated by non-federal related activity within its borders and that states should be authorized and encouraged by Congress to enter into interstate compacts, as necessary for the purpose of carrying out this responsibility."

In response to the states' concern with the low-level radioactive waste disposal issue, the Congres, in December 1980, passed the Low-Level Radioactive Policy Act (Public Law 96-573), which makes each state "responsible for providing for the availability of capacity either within or outside the state for the disposal" of waste, and authorizes and encourages the states to enter into interstate compacts for the purpose of meeting their responsibility. Significantly, the act allows compacting states to ban the importation of low-level radioactive wastes from states that are not party to the compact. With the passage of the act the stage was set for the development of regional compacts as an alternative to each state developing its own disposal facility.

The message was now clear that the status quo of low-level radioactive waste disposal was no longer an option. Each individual state would be required to provide for the disposal of low-level radioactive wastes generated within it's borders. The responsibility could be met by joining with other states to develop a regional compact for the purpose of managing low-level radioactive waste.

Because of the potentially high economic costs involved in developing an individual state facility for low-level radioactive waste disposal, the regional approach became the most attractive option. As a result, regional compact discusions began throughout the country. In the central states, compact discussions were begun through the efforts of the states of Kansas and Oklahoma. After initial discussions, the states involved in the central compact group agreed that the regional approach would serve the needs of each state equitably and would best provide for the safe and efficient management of low-level radioactive waste generated within the region.

As stated the negotiation process in the central states was initiated through the efforts of the states of Kansas and Oklahoma. Representatives from Arkansas, Kansas, Missouri and Oklahoma met in Kansas City, Missouri, on February 18, 1981, to discuss a regional approach to the management of low-level radioactive waste. Present at the meeting were representatives from Kansas, Missouri and Oklahoma. The Secretary of the Kansas Department of Health and Environment presided over the discussions. Kansas indicated it would like to see a compact developed around this nucleus of states, with provision for other states to join compact negotiations at a later date. Oklahoma and Missouri tentatively agreed to the Kansas proposal. Kansas proposed that the regional compact deal with both the management of low-level radioactive waste and hazardous waste. After much discussion the group decided to limit the discussions to low-level radioactive waste compacting. The issue of the economic viability of a regional site within the states represented was a major concern. The state of Oklahoma recommended that more states be invited to participate in the negotiations.

After a general discussion about low-level radioactive waste issues, the state representatives agreed that a regional compact commission should have no regulatory powers, that a state hosting a regional facility should have all regulatory powers over the facility and that a compact should be flexible and allow for new member states.

On April 28, 1981, a compact meeting was held in Oklahoma City, Oklahoma, with representatives from Arkansas, Kansas, Louisiana, Missouri, Oklahoma and Texas. The purpose of the meeting was to familiarize the participants with the issues surrounding low-level radioactive waste compacting. All the states present, with the exception of Texas, indicated that they would favor a regional approach to managing low-level radioactive waste. Texas indicated that the state was seriously considering a unilateral solution to the low-level radioactive waste problem.

On July 22 and 23, 1981, the state conferees met in Oklahoma City to begin the process of drafting compact language. Present at the meeting were conferees from Arkansas, Kansas, Iowa, Louisiana, Missouri, Nebraska, New Mexico, Oklahoma and Texas. It was the consensus of the conferees that there be an independent chairman for the meetings. The conferees were presented with a copy of the State Planning Council's model low-level radioactive waste compact. A general discussion of the model compact's language followed. No compact language was agreed to at this meeting.

The conferees met again on August 27 and 28, 1981, in Oklahoma City. The chairman distributed a letter from the state of Texas declaring that it would not be participating in further compact negotiation meetings. It was the decision of Texas to seek a unilateral solution to the low-level radioactive waste problem. There was consideral discussion about whether or not more states should be invited to join the compact in order to make the region more economically attractive. The conferees agreed that they would concentrate on the states present at the meeting, a number of which were already engaged in negotiations with other compact regions but had not yet made a decision on which region they would join. The dominant issues for discussion at this meeting was the method of selecting a regional facility site. The conferees reached a consensus that the commission established by the compact should develop criteria for site selection. Following the development of the criteria the commission would consider applications from potential site operators. The commission would select the operator/application best suited to meet the needs of the region.

On October 6 and 7, 1981, the conferees met in Oklahoma City, Oklahoma and agreed to a rough draft compact. The document developed at this meeting would be used as the basis for work at following meetings. The conferees also agreed to invite the states of North Dakota and South Dakota to join in the compact negotiations. Minnesota sent a representative to this meeting while New Mexico withdrew from the negotiations.

Another meeting was held in Oklahoma City on November 17, 1981, to work on draft compact language. Approved at the meeting was language submitted by the conferees addressing each article of the compact.

On December 21, 1981, the conferees convened in Oklahoma City to fine-tune the document agreed to at the last meeting. Following the adoption of selected compact provisions, the conferees agreed to present the document to legislative members in their respective states for comment. A meeting would be held in January to revise the compact to reflect comments received during the interim.

On January 29, 1982, the conferees met in Kansas City, Missouri, to complete the compact language. Some minor changes were made to the document that reflected comments received in each state since the last meeting. The final version of the compact was agreed to at this meeting.

Subsequent to the Kansas City meeting, the conferees have met twice to discuss compact ratification progress. No changes were made to the compact language. As of this date the states of Arkansas, Kansas and Louisiana have ratified the compact. The compact has been approved by the Oklahoma Senate and House action is expected this month. Governor Nigh is expected to sign the legislation. In Nebraska, the compact has been given a favorable recommendation by Senate Committee and should be taken up by the full Senate this month. Ratification by Nebraska is expected no later than April.

State conferees will be meeting in Little Rock, Arkansas on March 10 to discuss presenting the compact to the Congress for its consent.

ISSUES

During the negotiations a number of issues were raised that are key to the development of the compact. The following is a discussion of those issues and how they were resolved in the central states region.

Scope of the Contract - Should the Compact Deal with Waste Disposal or Waste Management?

The Low-Level Radioactive Waste Policy Act authorizes states to enter into compacts dealing with disposal of low-level radioactive waste. It became apparent during the early discussions by the conferees that the intention of the central states group was to deal with the entire waste management system and not only with disposal. Arguments were made that the disposal of low-level radioactive waste could not be regulated properly without also having authority over treatment and storage of waste. The issue was resolved when the conferees agreed that the compact could deal with the management of low-level radioactive waste if the Congress consented to such a compact. Therefore, the central states compact addresses management of waste rather than only disposal of waste.

In a letter to Mr. Wayne Kerr, Director, Office of State Programs, the United States Regulatory Commission, the conferees addressed the concerns the NRC had with the scope of the compact.

> It is not the intention of the conferees that the Central Interstate Low-Level Radioactive Waste Commission, as a regional body, would interfere with the appropriate health and safety responsibilities of either the NRC or any party state.
>
> The primary purpose of the Compact's policy of "management" as distinguished from "disposal" of low-level waste is based on the critical need to provide continued oversight as to the economic viability of any regional facility. Duplication of health and safety regulatory authority, such as Agreement State or NRC activities at waste generation sites, is not foreseen or intended in our understanding of Commission responsibilities.

The legal basis for the conferees' decision is contained in a memorandum from the Chairman to the negotiators of the Southeast Interstate Low-Level Radioactive Waste Management Compact (Appendix B).

Should the Compact Regulate the Importation of Waste Into the Region and the Exportation of Waste Outside the Region?

The Low-Level Radioactive Waste Policy Act authorizes compacting states after January 1, 1986, to ban the importation of waste generated outside the region to facilities located within the region. The conferees agreed that such a ban on the importation of waste into the region should be provided for in the compact. An exception to such a ban would be allowed upon the vote of the commission. A proposal was also made to provide for a ban on the exportation of waste from the region. The conferees agreed that such an exportation ban was necessary if the region was to remain economically sound.

The conferees also addressed the exportation ban issue in their letter to Mr. Kerr.

> The conferees recognize that there is some question as to whether or not the language of the federal Low-Level Radioactive Waste Policy Act authorizes a regional compact group to restrict the exportation of waste.
>
> Nevertheless, the conferees believe that the economic viability issue requires that the member states, who will ultimately be responsible (regardless of its operational life), take appropriate measures to protect the health and welfare of their citizens.
>
> Therefore, it is our intention to request the United States Congress to consent to the policy on exportation now proposed by ratifying the language as written.

The legal basis for this decision is also found in the memorandum attached as Appendix B.

Who Should be Responsible for the Licensing and Maintenance of Regional Facilities?

The conferees concluded that the regulation and licensing of regional facilities should be left to the host state and not to the commission. If the host state is not an agreement state under NRC regulations then licensing authority is retained by the NRC.

Should Each Party State Be Required to Obtain Agreement State Status from the Nuclear Regulatory Commission?

After much discussion the conferees reached a consensus that the party states would not be required by the compact to obtain agreement state status.

Who Should Determine the Location of a Regional Facility?

The Conferees considered several alternatives for facility designation. One option presented was to have the commission designate a state within the region as a host state with the siting decision to be made by the state. The conferees feared that such a designation process could be reduced to a political decision, so they chose instead to adopt the option currently found in Article V of the compact. In general, the commission takes applications from potential facility operators and makes a choice of which proposal(s) will better serve the needs of the region.

Designation of a regional facility is not, however, made until the needs of the regional have been determined.

How Should the Commission Be Funded?

Three methods of financing the commission were discussed. The commission could be funded either by fees collected from the generators of waste, by fees collected from the users of regional facilities or by fees paid by the parties to the compact. The option of having waste generators pay fees to the commission was not chosen because it is possible that not all generators of waste would use the regional facilities. The conferees agreed that the states could not be expected to provide funds on an unlimited continuing basis to maintain commission operations. The consensus was that users of regional facilities should bear the cost involved in operating the commission and its programs. The result of the discussions was the funding mechanism found in Article IV(h). Initial funding for the commission is to be shared equally by the party states. Following the development of a regional facility the party states will be relieved of their duty to finance the commission.

What Liability Should the Commission Have?

The conferees agreed that the commission was a legal entity separate and distinct from the party states and should be liable for its own actions. The members of the commission are exempt from personal liability for action taken by them in their official capacity.

Should a Party State Not Meeting Its Obligations Under the Compact Be Penalized?

The conferees agreed that a state failing to comply with the terms of the compact or fulfill its obligations should have its privileges suspended or membership in the compact revoked. Revocation of membership may come only after a vote of the commission and takes effect one year from the date of revocation. A state whose membership in the compact has been revoked is subject to a monetary penalty. The procedures and penalty for revocation is found in Article VII(e).

Who Should Be Eligible for Membership in the Compact?

At the end of the negotiation process the conferees voted to include a list of states eligible to join the compact. Initial eligibility terminates January 1, 1984. The compact also provides for admission of states not listed as initially eligible parties. The commission is empowered to approve or disapprove the application of a non-eligible state for membership in the compact.

CONCLUSION

In 1980 the Congress dictated what state responsibility would be in the area of low-level radioactive waste management. Congressional action presented the states with a new challenge. The challenge has been met by the states in the central region. We have done our part by developing a system for managing low-level radioactive wastes. That system is established in the Central Interstate Low-Level Radioactive Waste Compact.

Before the states can act to implement their management system, the Congress must consent to the compact. In order to carry out our responsibility we must have the power to act, that power can be formalized only by the Congress' consent to the compact.

You have given us a challenge and we have met it. The responsibility of allowing our system to work rests with you. We ask that you act quickly so the system can be implemented.

APPENDIX A

Substitute for HOUSE BILL No. 2809

AN ACT entering into the central interstate low-level radioactive waste compact.

Be it enacted by the Legislature of the State of Kansas:

Section 1. The central interstate low-level radioactive waste compact is hereby entered into and enacted into law in the form substantially as follows:

ARTICLE I. POLICY AND PURPOSE

The party states recognize that each state is responsible for the management of its non-federal low-level radioactive wastes. They also recognize that the Congress, by enacting the *Low-Level Radioactive Waste Policy Act* (Public Law 96-573) has authorized and encouraged states to enter into compacts for the efficient management of wastes. It is the policy of the party states to cooperate in the protection of the health, safety and welfare of their citizens and the environment and to provide for and encourage the economical management of low-level radioactive wastes. It is the purpose of this compact to provide the framework for such a cooperative effort; to promote the health, safety and welfare of the citizens and the environment of the region; to limit the number of facilities needed to effectively and efficiently manage low-level radioactive wastes and to encourage the reduction of the generation thereof; and to distribute the costs, benefits and obligations among the party states.

ARTICLE II. DEFINITIONS

As used in this compact, unless the context clearly requires a different construction:

a. "Commission" means the Central Interstate Low-Level Radioactive Waste Commission;

b. "disposal" means the isolation and final disposition of waste;

c. "extended care" means the care of a regional facility including necessary corrective measures subsequent to its active use for waste management until such time as the regional facility no longer poses a threat to the environment or public health;

d. "facility" means any site, location, structure or property used or to be used for the management of waste;

e. "generator" means any person who, in the course of or as an incident to manufacturing, power generation, processing, medical diagnosis and treatment, biomedical research, other industrial or commercial activity, other research or mining in a party state, produces or processes waste. "Generator" does not include any person who receives waste generated outside the region for subsequent shipment to a regional facility;

f. "host state" means any party state in which a regional facility is situated or is being developed;

g. "low-level radioactive waste" or "waste" means, as defined in the *Low-Level Radioactive Waste Policy Act* (Public Law 96-573), radioactive waste not classified as: High-level radioactive waste, transuranic waste, spent nuclear fuel, or byproduct material as defined in section 11 e.(2) of the Atomic Energy Act of 1954, as amended through 1978.

h. "management of waste" means the storage, treatment or disposal of waste;

i. "notification of each party state" means transmittal of written notice to the governor, presiding officer of each legislative body and any other persons designated by the party state's Commission member to receive such notice;

j. "party state" means any state which is a signatory party to this compact;

k. "person" means any individual, corporation, business enterprise or other legal entity, either public or private;

l. "region" means the area of the party states;

m. "regional facility" means a facility which is located within the region and which has been approved by the Commission for the benefit of the party states;

n. "site" means any property which is owned or leased by a generator and is contiguous to or divided only by a public or private way from the source of generation;

o "state" means a state of the United States, the District of Columbia, the Commonwealth of Puerto Rico, the U.S. Virgin Islands or any other territorial possession of the United States;

p. "storage" means the holding of waste for treatment or disposal; and

q. "treatment" means any method, technique or process, including storage for radioactive decay, designed to change the physical, chemical or biological characteristics or composition of any waste in order to render such waste safer for transport or management, amenable for recovery, convertible to another usable material or reduced in volume.

ARTICLE III. RIGHTS AND OBLIGATIONS

a. There shall be provided within the region one or more regional facilities which together provide sufficient capacity to manage all wastes generated within the region. It shall be the duty of regional facilities to accept compatible wastes generated in and from party states, and meeting the requirements of this act, and each party state shall have the right to have the wastes generated within its borders managed at such facility.

b. To the extent authorized by federal law and host state law, a host state shall regulate and license any regional facility within its borders and ensure the extended care of such facility.

c. Rates shall be charged to any user of the regional facility, set by the operator of a regional facility and shall be fair and reasonable and be subject to the approval of the host state. Such approval shall be based upon criteria established by the Commission.

d. A host state may establish fees which shall be charged to any user of a regional facility and which shall be in addition to the rates approved pursuant to section c. of this Article, for any regional facility within its borders. Such fees shall be reasonable and shall provide the host state with sufficient revenue to cover any costs associated with such facilities. If such fees have been reviewed and approved by the Commission and to the extent that such revenue is insufficient, all party states shall share the costs in a manner to be determined by the Commission.

e. To the extent authorized by federal law, each party state is responsible for enforcing any applicable federal and state laws and regulations pertaining to the packaging and transportation of waste generated within or passing through its borders and shall adopt practices that will ensure that waste shipments originating within its borders and destined for a regional facility will conform to applicable packaging and transportation laws and regulations.

f. Each party state has the right to rely on the good faith performance of each other party state.

g. Unless authorized by the Commission, it shall be unlawful after January 1, 1986 for any person:

1. To deposit at a regional facility, waste not generated within the region;
2. to accept, at a regional facility, waste not generated within the region;
3. to export from the region, waste which is generated within the region; and
4. to transport waste from the site at which it is generated except to a regional facility.

ARTICLE IV. THE COMMISSION

a. There is hereby established the Central Interstate Low-Level Radioactive Waste Commission. The Commission shall consist of one voting member from each party state to be appointed according to the laws of each state. The appointing authority of each party state shall notify the Commission in writing of the identity of its member and any alternates. An alternate may act on behalf of the member only in the absence of such member. Each state is responsible for the expenses of its member of the Commission.

b. Each Commission member shall be entitled to one vote. Unless otherwise provided herein, no action of the Commission shall be binding unless a majority of the total membership casts its vote in the affirmative.

c. The Commission shall elect from among its membership a chairman. The Commission shall adopt and publish, in convenient form, by-laws and policies which are not inconsistent with this compact.

d. The Commission shall meet at least once a year and shall also meet upon the call of the chairman, by petition of a majority of the membership or upon the call of a host state member.

e. The Commission may initiate any proceedings or appear as an intervenor or party in interest before any court of law, or any federal, state or local agency, board or commission that has jurisdiction over any matter arising under or relating to the terms of the provisions of this compact. The Commission shall determine in which proceedings it shall intervene or otherwise appear and may arrange for such expert testimony, reports, evidence or other participation in such proceedings as may be necessary to represent its views.

f. The Commission may establish such committees as it deems necessary for the purpose of advising the Commission on any and all matters pertaining to the management of waste.

g. The Commission may employ and compensate a staff limited only to those persons necessary to carry out its duties and functions. The Commission may also contract with and designate any person to perform necessary functions to assist the Commission. Unless otherwise required by acceptance of a federal grant the staff shall serve at the Commission's pleasure irrespective of the civil service, personnel or other merit laws of any of the party states or the federal government and shall be compensated from funds of the Commission.

h. Funding for the Commission shall be as follows:

1. The Commission shall set and approve its first annual budget as soon as practicable after its initial meeting. Party states shall equally contribute to the Commission budget on an annual basis, an amount not to exceed $25,000 until surcharges are available for that purpose. Host states shall begin imposition of the surcharges provided for in this section as soon as practicable and shall remit to the Commission funds resulting from collection of such surcharges within 60 days of their receipt; and

2. each state hosting a regional facility shall annually levy surcharges on all users of such facilities, based on the volume and characteristics of wastes received at such facilities, the total of which:

(a) Shall be sufficient to cover the annual budget of the Commission; and

(b) shall be paid to the Commission, provided, however, that each host state collecting such surcharges may retain a portion of the collection sufficient to cover the administrative costs of collection, and that the remainder be sufficient only to cover the approved annual budget of the Commission.

i. The Commission shall keep accurate accounts of all receipts and disbursements. An independent certified public accountant shall annually audit all receipts and disbursements of Commission funds and submit an audit report to the Commission. Such audit report shall be made a part of the annual report of the Commission required by this Article.

j. The Commission may accept for any of its purposes and functions any and all donations, grants of money, equipment, supplies, materials and services, conditional or otherwise from any person and may receive, utilize and dispose of same. The nature, amount and conditions, if any, attendant upon any donation or grant accepted pursuant to this section, together with the identity of the donor, grantor or lender, shall be detailed in the annual report of the Commission.

k. (1) Except as otherwise provided herein, nothing in this compact shall be construed to alter the incidence of liability of any kind for any act, omission, course of conduct, or on account of any causal or other relationships. Generators, transporters of waste, owners and operators of facilities shall be liable for their acts, omissions, conduct or relationships in accordance with all laws relating thereto.

(2) The Commission herein established is a legal entity separate and distinct from the party states and shall be so liable for its actions. Liabilities of the Commission shall not be deemed liabilities of the party states. Members of the Commission shall not be personally liable for actions taken by them in their official capacity.

l. Any person or party state aggrieved by a final decision of the Commission may obtain judicial review of such decisions in the United States District Court in the District wherein the Commission maintains its headquarters by filing in such court a petition for review within 60 days after the Commission's final decision. Proceedings thereafter shall be in accordance with the rules of procedure applicable in such court.

m. The Commission shall:

1. Receive and approve the application of a non-party state to become a party state in accordance with Article VII;

2. submit an annual report to, and otherwise communicate with, the governors and the presiding officers of the legislative bodies of the party states regarding the activities of the Commission;

3. hear and negotiate disputes which may arise between the party states regarding this compact;

4. require of and obtain from the party states, and non-party states seeking to become party states, data and information necessary to the implementation of Commission and party states' responsibilities;

5. approve the development and operation of regional facilities in accordance with Article V;

6. notwithstanding any other provision of this compact, have the authority to enter into agreements with any person for the importation of waste into the region and for the right of access to facilities outside the region for waste generated within the region. Such authorization to import or export waste requires the approval of the Commission, including the affirmative vote of any host state which may be affected;

7. revoke the membership of a party state in accordance with Articles V and VII;

8. require all party states and other persons to perform their duties and obligations arising under this compact by an appropriate action in any forum designated in section e. of Article IV; and

9. take such action as may be necessary to perform its duties and functions as provided in this compact.

ARTICLE V. DEVELOPMENT AND OPERATION OF REGIONAL FACILITIES

a. Following the collection of sufficient data and information from the states, the Commission shall allow each party state the opportunity to volunteer as a host for a regional facility.

b. If no state volunteers or if no proposal identified by a volunteer state is deemed acceptable by the Commission, based on the criteria in section c. of this Article, then the Commission shall publicly seek applicants for the development and operation of regional facilities.

c. The Commission shall review and consider each applicant's proposal based upon the following criteria:

1. The capability of the applicant to obtain a license from the applicable authority;

2. the economic efficiency of each proposed regional facility, including the total estimated disposal and treatment costs per cubic foot of waste;

3. financial assurances;

4. accessibility to all party states; and

5. such other criteria as shall be determined by the Commission to be necessary for the selection of the best proposal, based on the health, safety and welfare of the citizens in the region and the party states.

d. The Commission shall make a preliminary selection of the proposal or proposals considered most likely to meet the criteria enumerated in section c. and the needs of the region.

e. Following notification of each party state of the results of the preliminary selection process, the Commission shall:

1. Authorize any person whose proposal has been selected to pursue licensure of the regional facility or facilities in accordance

with the proposal originally submitted to the Commission or as modified with the approval of the Commission; and

2. require the appropriate state or states or the U.S. Nuclear Regulatory Commission to process all applications for permits and licenses required for the development and operation of any regional facility or facilities within a reasonable period from the time that a completed application is submitted.

f. The preliminary selection or selections made by the Commission pursuant to this Article shall become final and receive the Commission's approval as a regional facility upon the issuance of a license by the licensing authority. If a proposed regional facility fails to become licensed, the Commission shall make another selection pursuant to the procedures identified in this Article.

g. The Commission may by two-thirds affirmative vote of its membership, revoke the membership of any party state which, after notice and hearing shall be found to have arbitrarily or capriciously denied or delayed the issuance of a license or permit to any person authorized by the Commission to apply for such license or permit. Revocation shall be in the same manner as provided for in section e. of Article VII.

ARTICLE VI. OTHER LAWS AND REGULATIONS

a. Nothing in this compact shall be construed to:

1. Abrogate or limit the applicability of any act of Congress or diminish or otherwise impair the jurisdiction of any federal agency expressly conferred thereon by the Congress;

2. prevent the application of any law which is not otherwise inconsistent with this compact;

3. prohibit or otherwise restrict the management of waste on the site where it is generated if such is otherwise lawful;

4. affect any judicial or administrative proceeding pending on the effective date of this compact;

5. alter the relations between, and the respective internal responsibilities of, the government of a party state and its subdivisions; and

6. affect the generation or management of waste generated by the federal government or federal research and development activities.

b. No party state shall pass or enforce any law or regulation which is inconsistent with this compact.

c. All laws and regulations or parts thereof of any party state which are inconsistent with this compact are hereby declared null and void for purposes of this compact. Any legal right, obligation, violation or penalty arising under such laws or regulations prior to enactment of this compact shall not be affected.

d. No law or regulation of a party state or of any subdivision or instrumentality thereof may be applied so as to restrict or make more costly or inconvenient access to any regional facility by the generators of another party state than for the generators of the state where the facility is situated.

ARTICLE VII. ELIGIBLE PARTIES, WITHDRAWAL, REVOCATION, ENTRY INTO FORCE, TERMINATION

a. This compact shall have as initially eligible parties the states of Arkansas, Iowa, Kansas, Louisiana, Minnesota, Missouri, Nebraska, North Dakota and Oklahoma. Such initial eligibility shall terminate on January 1, 1984.

b. Any state may petition the Commission for eligibility. A petitioning state shall become eligible for membership in the compact upon the unanimous approval of the Commission.

c. An eligible state shall become a member of the compact and shall be bound by it after such state has enacted the compact into law. In no event shall the compact take effect in any state until it has been entered into force as provided for in section f. of this Article.

d. Any party state may withdraw from this compact by enacting a statute repealing the same. Unless permitted earlier by unanimous approval of the Commission, such withdrawal shall take effect five years after the governor of the withdrawing state has given notice in writing of such withdrawal to each governor of the party states. No withdrawal shall affect any liability already incurred by or chargeable to a party state prior to the time of such withdrawal.

e. Any party state which fails to comply with the terms of this compact or fulfill its obligations hereunder may, after notice and hearing, have its privileges suspended or its membership in the compact revoked by the Commission. Revocation shall take effect one year from the date such party state receives written notice from the Commission of its action. The Commission may require such party state to pay to the Commission, for a period not to exceed five years from the date of notice of revocation, an amount determined by the Commission based on the anticipated fees which the generators of such party state would have paid to each regional facility and an amount equal to that which such party state would have contributed in accordance with section d. of Article III, in the event of insufficient revenues. The Commission shall use such funds to ensure the continued availability of safe and economical waste management facilities for all remaining party states. Such state shall also pay an amount equal to that which such party state would have contributed to the annual budget of the Commission if such party state would have remained a member of the compact. All legal rights established under this compact of any party state which has its membership revoked shall cease upon the effective date of revocation; however, any legal obligations of such party state arising prior to the effective date of revocation shall not cease until they have been fulfilled. Written notice of revocation of any state's membership in the compact shall be transmitted immediately following the vote of the Commission, by the chairman, to the governor of the affected party state, all other governors of the party states and the Congress of the United States.

f. This compact shall become effective after enactment by at least three eligible states and after consent has been given to it by the Congress. The Congress shall have the opportunity to withdraw such consent every five years. Failure of the Congress to withdraw its consent affirmatively shall have the effect of renewing consent for an additional five year period. The consent given to this compact by the Congress shall extend to any future admittance of new party states under sections b. and c. of this Article and to the power to ban the exportation of waste pursuant to Article III.

g. The withdrawal of a party state from this compact under section d. of this Article or the revocation of a state's membership in this compact under section e. of this Article shall not affect the applicability of this compact to the remaining party states.

h. This compact shall be terminated when all party states have withdrawn pursuant to section d. of this Article.

ARTICLE VIII. PENALTIES

a. Each party state, consistent with its own law, shall prescribe and enforce penalties against any person for violation of any provision of this compact.

b. Each party state acknowledges that the receipt by a regional facility of waste packaged or transported in violation of applicable laws and regulations can result in sanctions which may include suspension or revocation of the violator's right of access to the regional facility.

ARTICLE IX. SEVERABILITY AND CONSTRUCTION

The provisions of this compact shall be severable and if any phrase, clause, sentence or provision of this compact is declared by a court of competent jurisdiction to be contrary to the Constitution of any participating state or of the United States or the applicability thereof to any government, agency, person or circumstance is held invalid, the validity of the remainder of this compact and the applicability thereof to any government, agency, person or circumstance shall not be affected thereby. If any provision of this compact shall be held contrary to the Constitution of any state participating therein, the compact shall remain in full force and effect as to the state affected as to all severable matters. The provisions of this compact shall be liberally construed to give effect to the purpose thereof.

Sec. 2. This act shall take effect and be in force from and after its publication in the statute book.

I hereby certify that the above BILL originated in the HOUSE, and passed that body.

March 5, 1982

Wendell Lady
Speaker of the House

Geneva Seward
Chief Clerk of the House

Passed the SENATE March 25, 1982

Ross O. Doyen
President of the Senate

Lu Kenney
Secretary of the Senate

APPROVED April 7, 1982

John Carlin
Governor

STATE OF KANSAS

OFFICE OF SECRETARY OF STATE

I, JACK H. BRIER, Secretary of State of the State of Kansas, do hereby certify that the above and foregoing is a correct copy of the original enrolled bill now on file in my office.

IN TESTIMONY WHEREOF, I have hereunto subscribed my name and affixed my official seal, this 8th day of April 1982

Secretary of State

BY

Asst. Secretary of State

APPENDIX B

MEMORANDUM

TO: State Low Level Radioactive Waste Compact Negotiators

FROM: Raymond J. Peery, Resource Attorney

DATE: June 18, 1981

When we last met in Richmond, Virginia a number of questions were raised concerning the legality and propriety of certain compact language. Prior to the adjournment of our meeting you directed me to research three legal questions.

1. Can a compact address the concept of low level radioactive waste management or must it be designed to deal only with the disposal of low level radioactive waste?
2. Can a compact ban the exportation of low level radioactive waste from the region?
3. Can a compact containing a clause which excludes waste not generated in the region from being managed within the region exclude such waste on a selective basis?

Statutory law and case history on the above stated questions is limited at best. I have made an attempt to research these three questions with a view toward providing the best available answer. I hope the following discussion will enable you to better assess your position regarding each of the above questions.

1. CAN A COMPACT ADDRESS THE CONCEPT OF LOW LEVEL RADIOACTIVE WASTE MANAGEMENT OR MUST IT BE DESIGNED TO DEAL ONLY WITH THE DISPOSAL OF LOW LEVEL RADIOACTIVE WASTE?

Discussion of this question generally centers around the language used in the Low Level Waste Policy Act (P.L. 96-573). Specifically, Section 201(a)(2)(A), says that "the states may enter into such compacts as may be necessary to provide for the establishment and operation of facilities for the disposal of low level radioactive waste." Thus, the Act clearly discusses the concept of waste disposal and not waste management. However, this is not entirely decisive with regard to the above stated question. It must be remembered that the Act passed the 96th Congress very late in the session and was in hand written form. Considering the scope of the legislation there is very little Congressional record to examine in an attempt to define the Congressional intent behind the Act. There is, however, an indication that the Act was intended to deal with more than disposal. During the floor debate on the Bill, Senator Strom Thurmond of South Carolina, one of the proponents of the bill, stated "both chambers have now passed bills encouraging the development of such agreements or compacts to allow for the management and disposal of low level radioactive waste on a regional basis." The indication is that members of Congress were aware that dealing with low level radioactive waste was a complex matter which went beyond disposal of such waste.

One may argue that in a contested case the words of the Low Level Waste Policy Act would be controlling, and therefore, a compact can deal only with disposal. This argument may be decisive if the drafters of the compact relied solely on their ability to draft a compact based on the Low Level Waste Policy Act. While the Low Level Waste Policy Act has established a federal policy that "each state is responsible for the disposal of non-federal low level radioactive waste generated within its borders . . ." it is not the sole authority under which states may compact. The Act did not grant unto the states a power which they did not already possess under the Constitution of the United States. Except for the limitation that Congressional consent must be obtained (U.S. Constitution, Article I, §10, 21.3), the original inherent sovereign rights of the states to make compacts with one another was not surrendered under the Constitution. Huse v. Glover, 119 U.S. 543, 549 (1886). Thus, while the right of states to compact with one another was retained under the Constitution, such compacts must be consented to by Congress. By consenting to a compact Congress gives its approval to the terms and conditions of such compact. While prior Congressional legislation may set forth a federal policy, the Congress may authorize actions by the states which might be contrary to a previously endorsed policy. Thus, the important action of Congress is its consent to the compact.

A compact may be submitted to Congress containing any language agreed to by the compacting states. The crucial issue is whether or not Congress will consent to that particular language. During any debate in Congress concerning its consent to a compact, numerous arguments both pro and con will surface as to each specific provision of the compact. It is assumed that if a compact containing language dealing with the management of low level radioactive waste were submitted to Congress, a good argument would be made by the presenting states that an entire management system must be dealt with in order that low level radioactive waste be properly handled and disposed of. The burden then would be on the presenting states to convince Congress that it should consent to the langauge in the compact. If Congress so consents, it is my opinion that the language would sustain any court challenge.

In conclusion the language of an interstate compact dealing with low level radioactive waste is not limited by the Low Level Waste Policy Act, but rather is limited only by the will of Congress at the time the compact is presented for consent.

2. CAN A COMPACT BAN THE EXPORTATION OF LOW LEVEL RADIOACTIVE WASTE FROM THE REGION?

This particular question involves a potential impact on interstate commerce. As a general proposition, the states cannot impact interstate commerce unless authorized to do so by Congress. The Low Level Waste Policy Act does not address a regional ban on the exportation of waste from the region. Thus, the answer to the stated question is founded upon the power of Congress to consent to an interstate compact.

The Supreme Court has upheld the proposition that "Congress has undoubted power to redefine the distribution of power over interstate commerce. It might either permit the states to regulate the commerce in a manner which would otherwise not be permissable . . ., or exclude state regulation even of matters of peculiarly local concern which nevertheless affect interstate commerce." The Southern Pacific Company v. Arizona 325 U.S. 761 (1944). Thus, Congress has the power to enable a state or a group of states to affect interstate commerce in a manner which would not otherwise be permitted. This power of Congress was reaffirmed in the case of Prudential Insurance Company v. Benjamin 328 U.S. 408 (1946). In that case the Supreme Court in dicta recognized that "though Congress had no purpose to validate unconstitutional provisions of state laws, except insofar as the

Constitution itself gives Congress the power to do this by removing obstacles to state actions arising from its own action or by consenting to such laws, it clearly put the full weight of its power behind existing and future state legislation to sustain it from any attack under the commerce clause to whatever extent this may be done with the force of that power behind it, subject only to the exceptions expressly provided for." The Court recognized that a state law which appeared to be unconstitutional on its face because it interfered with the power of Congress could be given validity if Congress by an affirmative action consented to such state law. The Court in *Benjamin* also found that Congress' plenary scope enables it "not only to promote but also to prohibit interstate commerce, as it has done frequently and for a great variety of reasons." Thus, Congress has a broad scope of authority with regard to its ability to affect interstate commerce or allow a state or group of states to affect interstate commerce.

In conclusion, the Congress by consenting to an interstate compact may authorize a state or group of states to affect interstate commerce in a way which otherwise would be unconstitutional. The issue with regard to the question presented would be whether or not Congress would in fact consent to a provision in the compact which would limit or prohibit the exportation of waste from the region. If it is the wisdom of the compact drafters to include such a provision, it is suggested that the provision be specifically referred to in the Congressional consent section so that Congress would be put on notice that they are consenting to that specific language which affects interstate commerce. The power that Congress has to consent to such language is the same power that Congress has to consent to the langauge that authorizes the exclusion of waste from the region.

3. CAN A COMPACT CONTAINING A CLAUSE WHICH EXCLUDES WASTE NOT GENERATED IN THE REGION FROM BEING MANAGED WITHIN THE REGION EXCLUDE SUCH WASTE ON A SELECTIVE BASIS?

The Low Level Waste Policy Act does not speak of selective exclusion or complete exclusion. The Act states that "after January 1, 1986, any such compact *may* restrict the use of the regional disposal facilities under the compact to the disposal of low level radioactive waste generated within the region" (emphasis added). The Act does not mandate that waste be excluded from the region nor does it state that if waste is excluded from the region all waste generated outside of the region must be excluded. Again, the legislative history of the Bill is limited and does not address the issue of selective exclusivity directly, however, a portion of the debate on the Senate floor may be helpful. Senator Proxmire inquired as to whether "the state itself would have the opportunity to deny another state in another part of the country from putting its waste within that state . . ." Senator McClure responded that "this is commercial waste only. The Senator is correct. I shall rephrase it in a little more positive terms rather than negative terms. The Senator said that the state would have the capacity to deny. Let me indicate that the state would have to positively affirm." The debate on this point seems to indicate that while a state or region may exclude waste from outside the state or region such an exclusion must result from an affirmation of that policy, and nowhere in the legislative history is there an indication that exclusion of waste is an all or nothing proposition.

If the argument that exclusivity under the Low Level Waste Policy Act is an all or nothing proposition is accepted we must again turn to the underlying concept that the compact may contain any provision which is acceptable to Congress and that the validity of any provision of the compact will be upheld if Congress has consented to it. Thus, the compact may provide for selective exclusion of waste if the drafters are confident that the Congress will approve that langauge.

CONCLUSION

It is my opinion that a low level radioactive waste compact can legally provide for a management system, ban the exportation of waste from the region and provide for selective exclusivity. This opinion is based on the legal issues which surround the questions presented, and is not based on political factors. It may very well be that the political climate of the Congress when the compact is presented may dictate that each of these questions be answered in the negative. While Congress may consent to the langauge which we have considered, it does not have to do so. In this instance, the Congress is the final arbiter of the impact that the compact will have on interstate commerce.

NORTHEAST COMPACT FOR LOW-LEVEL RADIOACTIVE WASTE

FINAL DRAFT

STATEMENT OF
THE COALITION OF NORTHEASTERN GOVERNORS

Introduction

The Low-Level Radioactive Waste Policy Act of 1980 (Act) made each state responsible for providing for disposal of low-level radioactive waste (LLW) generated within its borders, and established a national policy that such waste can be most safely and efficiently managed on a regional basis. The Congress authorized states to enter into compacts to provide for the establishment and operation of regional disposal facilities to carry out this policy. It provided that a compact consented to by the Congress may restrict use of the regional facility after January 1, 1986 to waste generated within the region.

The Act was adopted by the Congress with support of the states, acting through the National Governors' Association, the National Conference of State Legislatures and the State Planning Council. Responding to congressional action, the Coalition of Northeastern Governors (CONEG) adopted a resolution in August 1981 supporting pursuit of one or more regional compacts to deal with the problem of disposal of low-level waste generated in the Northeast. The CONEG states--Connecticut, Massachusetts, New Hampshire, New Jersey, New York, Pennsylvania, Rhode Island and Vermont--were joined upon invitation by Delaware, Maine and Maryland.

These eleven northeastern states currently generate more than one-third of the total low-level waste (LLW) generated in the country. Six of the top twenty states generating low-level waste are located in the region: Pennsylvania, New York, Massachusetts, Connecticut, New Jersey, and Maryland. The region's waste is produced by nuclear power plants, by industry in such activities as production of radio-pharmaceuticals, calibration instruments, and luminous dials; and by private and governmental medical and research institutions in the conduct of diagnostic medicine, cancer treatment and bio-research. Currently 54 percent of the region's waste is a by-product of the generation of electricity. The volume of low-level waste produced annually in the eleven states is expected to increase steadily through the year 2000. Without changes in waste management and volume reduction, the region's waste volume may approach 58,000 cubic meters by the year 2000, about 1.9 times the current average. The Northeast's low-level waste is currently shipped to disposal sites at Hanford, Washington and Barnwell, South Carolina.

The CONEG resolution established an organizational framework for discussion leading to a compact(s) which was unique among the regional compact efforts. Recognizing the importance of active gubernatorial and legislative involvement, it created a Policy Working Group (PWG) composed of up to three credentialled members per state who represented the legislature and the governor. It also created a Technical Subcommittee of senior radiological health and environmental safety officials from each state to advise the PWG on technical, regulatory and management issues affecting a LLW compact. The Committees called for in the CONEG resolution were quickly formed and began their work in September 1981. Together they have explored a broad range of technical, legal, and policy issues involved in developing a regional approach to low-level waste management.

Over the past 18 months, the Policy Working Group has met regularly to develop a draft regional compact(s). Meeting in open session, it has been assisted by formal and informal consultation with the U.S. Nuclear

Regulatory Commission (NRC), public participation and comment by citizen, industry and other interest groups at the PWG meetings, and discussions with formal and informal advisory groups and task forces within the states. The Technical Subcommittee completed a report on waste volumes in the region projected to the year 2000 and conducted an overview of the regional facilities needed for effective and efficient management of the region's waste.

The Policy Working Group met its goal of completing a draft compact in time for consideration in the 1983 legislative sessions. The draft compact was forwarded to the eleven Governors in late February for their consideration and introduction into state legislatures. This action followed a reaffirmation by the Governors of their intention to pursue a cooperative regional approach in carrying out state responsibilities under P.L. 96-573.

Major Issues and Principles

A number of policy and legal issues arose during the PWG discussions. The primary issues include:

- allocation of responsibility and authority among the party states, the host state, a regional commission, and the federal government;
- ensuring the economic, legal, political and technical viability of a regional system for LLW disposal;
- ensuring that each state is capable of fulfilling its responsibilities under the compact;
- the process for selection of a state to host a regional facility; and
- providing for financial and legal liability for a regional facility.

In addressing these issues, the states' delegations have been guided by several general principles. First, each state has committed its good faith to participation in the compact negotiations. The good faith performance of each state in carrying out its obligations under the compact is the cornerstone of the document. Second, state sovereignty is to be upheld where not inconsistent with the limited demands of the compact, with regulatory authority residing with the federal, state, and local governments. Third, responsibilities imposed by the compact are to be distributed in a equitable manner. Fourth, the compact is to be consistent with federal policy, law and regulations pursuant to the Atomic Energy Act of 1954 as amended. Fifth, the compact is created as a "living" flexible document--analogous to Chief Justice Marshall's characterization of the U.S. Constitution. As state law and a supra-state contract, it is designed to remain viable throughout the decades and to be responsive to the diverse administrative and legal systems unique to the northeastern states. As a single document which balances the interests of eleven sovereign states, the northeastern region, and the federal government in low-level waste management, the draft compact is designed as a basic charter of interstate and state federal relations.

Major Provisions

The compact has four major provisions:

- It sets forth the major roles, responsibilities and obligations of the party states, the host states, and the regional commission for the management of low-level waste. Any regulatory or oversight responsibilities associated with public health, safety and environment must be consistent with applicable regulatory authorities. The primary responsibilities are 1) the capability and good faith commitment of each state to meet its obligations under the compact; and 2) timely development of a regional facility by a host state. Each state repeals or otherwise makes inapplicable those laws or portions of laws which are inconsistent with the compact or which impede the state's ability to carry out its responsibilities under the compact;

- It establishes the Northeast Interstate Low-Level Radioactive Waste Commission as an advisory and coordinative body to administer the compact and to ensure that the states' collective interests are considered in the siting, development and management of a regional facility. It has no direct operational or regulatory authority over a facility. The Commission and the affected host states must approve the export or import of waste to a regional facility;

- The compact establishes a process and criteria to guide the Commission in selecting a state to host a facility. The compact does not select a host state, nor does it specify how a state would site, develop, and oversee management of a regional facility, thus leaving these tasks to state and federal law and regulations.

- The compact lists the eleven northeastern states as initially eligible states, and sets forth the terms and conditions under which a state joins or withdraws from the compact . Reflecting the contractual basis of such a charter, it provides for penalties and sanctions, including revocation of membership, for states which fail to meet their agreed upon obligations.

The draft compact and a summary of its major provisions are included as Attachment A.

Compatibility with the Act and Existing Federal-State Regulatory Framework

The Northeast compact was drafted in a manner to satisfy two objectives. First, it provides the party states with adequate authority to carry out their responsibilities under the Act to provide for the availability of capacity for disposal of low-level waste. Second, it ensures that this authority is compatible with the intent of the Act and with the existing federal-state regulatory framework for disposal and transportation of waste.

In balancing state needs for adequate authority to ensure safe disposal with the primary federal role in the transportation and disposal of radioactive material, the compact authorizes states to provide for management activities essential to a workable, flexible regional system in the Northeast. This led to some questions from federal agencies regarding the scope of the draft compact. The northeastern states have carefully considered and responded to concerns expressed by federal agencies. They believe the draft compact to be fully compatible with the language and intent of the Act and with the existing regulatory framework for low-level waste.

Several issues raised by federal agencies warrant attention.

1. Management versus Disposal

The Act speaks both to the disposal of low-level waste and to its safe and efficient management on a regional basis [Sec.4(a)(1)]. The northeastern states believe that the ability to provide a regional system for low-level waste disposal requires a comprehensive system which includes all aspects of management relating to safe and efficient disposal.

The Northeast compact sets out management roles and responsibilities among the party states to ensure that the burdens and benefits of a regional system are equitably distributed. For example, the compact seeks to lessen the burden of a host state by requiring that each state, to the extent not prohibited by federal law, to institute practices which ensure that waste generated within or passing through its borders, is consistent with applicable federal regulations for packaging and transportation and with similar host state requirements related to disposal. This management task directly relates to safe and economic disposal since it reduces the prospect that materials improperly packaged for handling at a regional facility will be in transit. In addressing the broader area of management related to disposal, the northeastern states are also aware that safe regional management of low-level waste may, at times, call for activities not strictly considered disposal. Lack of access to a disposal facility on a short-term basis may make it necessary for the states to provide for interim shortage facilities. Economic management of a disposal facility may also argue for ancillary treatment facilities.

If its scope of authority were limited to disposal, the compact could not serve as the vehicle for a cooperative regional approach to safe and efficient management of low-level waste.

2. Import/Export Restrictions

The import exclusion provision of the Act meets the sound management objective of allowing regions to define themselves and to control the quantity of waste entering their regional facility. The Northeast compact authorizes the states, acting through the regional commission, to control the waste going to a regional facility through controls over the import and export of wastes into and from the region. The authority to control imports would extend to any type of regional facility developed under the compact, but would not restrict the importation of waste to privately developed facilities. The controls are flexible since the right of petition for export and import is allowed. The Commission may approve export or import upon a two-thirds vote, including the affirmative vote of the affected host state.

Control over export is essential to ensure stability within the region. In their planning, states must be able to predict with some reasonable certainty the volumes of waste likely to be handled at a regional facility. The projections are needed to ensure that the facility provides adequate capacity and that fees for closure, post-closure, and institutional control will accrue at a predictable rate. Generators already have the on-site management means and the market incentive to reduce the waste volumes handled at a regional facility. Open-ended export of waste would make even more difficult the task of efficient development and operation of a regional facility.

Flexible control over export of waste allows states to ensure that a regional facility has adequate design capacity and an adequate waste stream for economically sound management, while also providing for special needs of generators. The compact neither precludes nor encourages inter-regional shipment of waste; it merely ensures that the Commission has the flexibility to determine when such shipments are in the best interests of the affected states. Clarification of this authority by congressional consent is essential if the states are to properly carry out their responsibility to provide for the availability of adequate management capacity.

3. Regulatory Regime

The Nuclear Regulatory Commission (NRC) has expressed concern that a regional commission might assume the functions of a regional regulatory authority for health, safety and the environment. That this is not the case is clear from a close reading of the compact and from the intent of the states. The preservation of state sovereignty and the compatibility with the federal regulatory framework were two overriding principles guiding the drafting of the compact. Responsibilities given to the party states and regional commission are limited by federal law and congressional consent to the compact must be consistent with applicable regulatory authorities for public health, safety and environment. The regional commission is an advisory coordinative body. Its regulatory responsibilities are limited to those necessary to administer the compact.

The compact sets forth the basic rights and responsibilities of each party state. The Commission administers these basic provisions through regulations on how it carries out its responsibilities. However, the compact does not tell the states how to carry out their responsibilities.

In drafting the compact, the states considered and decided against requiring each state to develop the capacity to regulate and license low-level waste facilities. Some responsibilities related to inspection and enforcement by the party states may best be implemented through a 274i agreement between each state and the NRC. The NRC has indicated its willingness to enter into such agreements.

As the body representing the collective interests of the states, the Commission must be able to gather information and provide guidance essential to smooth operation of a regional system. It will develop a regional management plan which lists the type and size of regional facilities needed. It can provide reference guidelines to ensure the efficient and fair implementation of the compact. The Commission's determination of the type and number of regional facilities must be consistent with public health and safety considerations. However, the public health and safety requirements are set by the appropriate federal or state authority, not by the regional commission.

Any guidelines, rules, or regulations which might be developed by the commission to encourage consistent actions by the party states must be consistent with applicable federal regulations and are advisory only. The commission cannot mandate adoption of such reference guidelines by the party states nor can it enforce them directly. They may be considered as the commission's interpretation of party state obligations, and therefore a standard for evaluating a party state's fulfillment of its contractual responsibilities.

4. Definitions

In drafting definitions, the states intentionally avoided language tied to current statutes, regulations, organizational structure and technology. This is intended to minimize the difficult task of changing definitions in response to changes in federal organizational structure and state-of-the art technology for low-level waste disposal.

- The definition of disposal includes but is not limited to current NRC regulations for shallow land burial (10 CFR 61). This more flexible definition will allow the compact to incorporate other technologies for isolation of waste as they are accepted by the NRC. The states recognize the federal role in setting standards and criteria for disposal technologies and facilities.

- o The definition of high level waste is consistent with the Waste Policy Act of 1982 and NRC regulations, but omits specific technical criteria which may be changed by federal regulation.
- o The definition of low-level waste adheres to the non-technical statutory definition of the Atomic Energy Act as amended. It excludes federal atomic energy defense and research and development waste as stipulated in P.L. 96-573. That Act refers to atomic energy defense activities of the Secretary of the Department of Energy and federal research and development activities. The compact refers to these as activities of the federal government rather than the "Secretary" to avoid any confusion in future changes in federal law or organizations. Federal LLW waste currently disposed at commercial facilities is not affected by this exclusion.

5. Settlement of Disputes

The states recognize that low-level waste disposal is likely to be a sensitive public issue in the Northeast. Since the special status of interstate compacts raises difficult legal questions of joint or separate jurisdiction of state and federal courts, the compact provides guidance on standing, jurisdiction and venue for actions related to the commission. The intent is to minimize confusion and to prevent unreasonable delays in any court action. This provision is limited solely to actions by or against the commission. It does not affect legal actions of or against the party states or host state, even when these are related to rights and duties assigned by the compact; neither does it apply to actions taken by one party state against another party state.

The states attempt to address a number of potential problems by assigning jurisdiction. First, this provision resolves the confusing and time-consuming problem of "forum shopping" among various state and federal courts. By recognizing the precedence of federal courts, the compact emphasizes its interstate and quasi-federal nature and the overriding federal interest in radioactive material. Second, by designating a particular federal circuit, the compact encourages the court to develop expertise in the complex area of interstate compacts and low-level waste management. A number of federal courts in the region could conceivably have jurisdiction over activities under the commission. Courts in the District of Columbia offer a "neutral" ground in close proximity to the region. Neutrality could be an important factor should the action involve a party state and the commission.

The Northeast draft compact has specific provisions for judicial review of selected actions brought under the compact. Sections (n) and (o) of Article IV assign jurisdiction for actions brought by or against the commission to the U.S. district court in the District of Columbia, and stipulate that any actions initiated in a state court, whether in a party state or non-member state, be removed to the designated U.S. district court as provided in federal law (28 U.S.C. Section 1446). Appeals and review of final administrative decisions of the regional commission are assigned to the U.S. Circuit Court of Appeals for the District of Columbia.

It further provides that the Court of Appeals shall accord an expedited review to commission decisions relative to host state designation. In this limited case, failure to rule within 90 days after a petition is filed is deemed an affirmation of the regional commission's decision. Recognizing that the decisions made by the regional commission are both policy and adjudicatory in nature, the compact provides that courts shall not substitute their judgment for that of the commission. The compact does provide specific authority for the courts to act where the Commission decision was arbitrary and capricious, or for several other listed reasons.

The Northeast states appreciate the possible concern of the Congress with compact provisions affecting the federal courts, but believe that these jurisdictional provisions are necessary to ensure fulfillment of their responsibilities within the timeframe contemplated within the Act. Endless delays through legal maneuverings in the courts will undermine federal policy on low-level waste management and frustrate the development of needed regional facilities.

Ratification by the States

The northeastern states have moved deliberatively in developing a low-level waste compact, in the belief that a careful and thorough airing of policy, legal and technical issues is essential to public acceptance of a compact and to its eventual effectiveness. Many provisions, including the emphasis upon management, the maintenance of state sovereignty, the commitment to repeal laws which impede a state's ability to carry out its commitments, and the provisions for compensations, reflect careful balancing of the diverse state interests. Such provisions as these mark the compact as one reflecting the realities of the Northeast.

Submittal of the compact to the Governors this week marks a major milestone as the states move to take on their responsibilities under the Act. However, it is just the first of several required before a regional facility is operating. The compact now goes to the state legislatures. In the northeastern states, the tradition of citizen and activist legislatures is strong. The combination of public sensitivity to any issue involving radioactive material and the open legislative process is expected to result in close scrutiny of the compact as each state sorts through and determines the disposal option best suited to its interest.

An open and deliberative legislative review of the draft compact will in the long-run strengthen the effectiveness of a regional system in the Northeast. Since the compact has been introduced in only two states, any conjectures as to the timetable for state of ratification are premature. However, we expect that the majority of initially eligible states will be able to meet the June 30, 1984 date included in the compact. The states will monitor the legislative ratification process carefully and be prepared as a region to respond to legislative concerns.

The 1986 exclusionary date in the compact is fast approaching. The northeastern states recognize the concern of South Carolina, Washington and Nevada that they not continue to bear full responsibility for commercial disposal of low-level waste. They recognize that the 1986 exclusion date is necessary to ensure that other regions continue to make timely progress in developing their own capacity. However, realism also requires recognition of the fact that timely progress will not result in a regional facility being operational in the Northeast by 1986. Given the long lead time required for compact ratification, commission organization, host state selection, and facility siting and development, it is highly unlikely that a regional facility could be operating by that date even if a compact had been approved by the states in January 1981.

The northeastern states have shown good faith and expect to continue steady progress toward regional cooperation in low-level waste management. Clearly the region, with its substantial volumes and lack of an operating disposal facility begins at a different starting point than regions with an existing disposal facility. The geography of the Northeast, its high population density and its tradition of active legislative processes must also be weighed when determining the region's pace toward development of an operating facility. The region supports maintaining the 1986 date of the Act, with the understanding that interim interregional agreements or other arrangements will be essential to avoid major disruption to the safe and efficient management of over one-third of the nation's low-level waste.

ATTACHMENT A

NORTHEAST COMPACT FOR LOW-LEVEL RADIOACTIVE WASTE
FINAL DRAFT

Article I. Policy and Purpose

This article recognizes that under federal law, each state is responsible for the disposal of low-level radioactive waste generated within its borders, and declares that in order to promote public health and safety, it is the policy of the party states to enter into a regional compact which will: provide a framework for cooperative efforts; assure proper transportation of low-level wastes; minimize the number of facilities required to manage such wastes; distribute the costs, benefits and obligations of proper waste management equitably among the party states; and ensure the environmental and economic management of low-level waste generated in the region.

Article II. Definitions

Key terms used in the compact are defined in this article.

Article III. Rights and Obligations

This article establishes certain rights and obligations of party states and host states, which are additional to the rights enjoyed by sovereign states. Items addressed under party state rights and obligations include: the right of access to regional facilities; ensuring proper packaging and transportation of waste consistent with applicable federal and state laws and regulations; information and reporting requirements; good faith performance by each state to ensure regional facilities are available; and the capability of each party state to host a regional facility and ensure its proper management.

The rights and responsibilities of each host state include: ensuring timely development, operation and management of a regional facility; providing for reasonable fees and surcharges; ensuring sound packaging, transportation and disposal of waste consistent with applicable federal and state laws and regulations; and regular reporting to the regional Commission.

This article also contains an exclusionary ban on management at a regional facility of wastes generated outside the party states after January 1, 1986. Waste generated in the region cannot be exported to facilities outside the region without approval of the Commission and the affected host states.

Article IV. The Commission

A Northeast Interstate Low-Level Radioactive Waste Commission is created, comprised of one member from each party state and two members from a host state, to be appointed by the Governor according to state procedures. The Commission is empowered to perform a variety of oversight, information-gathering, planning and management functions pertaining to low-level waste disposal within the region, and to designate (by two-thirds vote) a host state for a regional facility if no state volunteers. The Commission rules on applications of eligible and non-party states to become party states and may invoke penalties and sanctions, including revocation of membership, on states which fail to fulfill their obligations. It and the host states determine whether waste can be imported into or exported from the region.

The Commission may mediate disputes among party states, negotiate agreements with other compacts and act as an intervenor on behalf of party states. It must adopt procedural regulations to ensure efficient operation and protection of due process. Meetings of the Commission are to be open to the public. It is separate from the party states and not liable for actions of the party states nor a facility operator. The Commission would be financed initially by a $70,000 payment from each party state, and subsequently through a special surcharge on users of the regional facility (or facilities).

Article V. Host State Selection and Development and Operation of Regional Facilities

This article establishes basic procedures for selection of a host state and for development of a regional facility. The Commission must develop a regional management plan for determining the type and number of regional facilities. Following a review, the Commission may designate a state volunteering to host a facility.

If no state volunteers, the Commission adopts procedures and criteria for designating a host state, based on statutory selection criteria. These are limited to health, safety, and welfare; environmental, economic, and social effects of a regional facility, benefits and costs; waste volumes and types generated in each party state; minimization of waste transportation; and existence of regional facilities in a party state.

A host state is responsible for timely identification of a site and timely development and operation of a facility. It oversees management of the facility, but must solicit comments from party states and the Commission on its management of the facility. A host state must provide notice of any emergency, temporary or scheduled closure of a facility. Fees and surcharges (for host state regulatory programs, post-closure and institutional control funds, compensation and incentives) must be reasonable, equitable and approved by the host state with comment by the Commission.

Article VI. Other Laws and Regulations

The legal parameters of the compact and its relationship to state laws and regulations are defined by this article. Party states are prohibited from passing any law which is inconsistent with the provisions of the compact without jeopardizing their membership status. All existing state laws and regulations of the state or its subdivisions which are inconsistent with the compact are declared null and void, and any provisions which prohibit, suspend or unreasonably delay or restrict the designation, siting or licensing of a regional facility are prohibited and repealed by ratification of the compact. The compact does not abrograte or limit the regulatory authority of the U.S. Nuclear Regulatory Commission or an agreement state under Section 247 of the Atomic Energy Act of 1954, as amended.

Article VII. Eligible Parties, Withdrawal, Revocation, Entry into Force, Termination

States initially eligible to join the compact include Connecticut, Delaware, Maine, Maryland, Massachusetts, New Hampshire, New Jersey, New York, Pennsylvania, Rhode Island, and Vermont. The initial eligibility status expires June 30, 1984. Procedures and requirements for an "eligible state" to become a "party state" are set forth in this article, as are procedures for withdrawal and revocation of "party state" status. The compact will take initial effect upon enactment into law by at least three states, but will not take full effect until ratified by Congress. Congress may withdraw its consent every five years.

Article VIII. Penalties

Each state shall prescribe and enforce penalties for violations of the compact in accordance with its own laws. Importation or exportation of waste without Commission approval is prohibited. The states are responsible for enforcing violations of the law, but the Commission may seek enforcement or remedies as provided in the compact.

Article IX. Compensation Provisions

The host state must ensure that funds and procedures are available during the operating and post-closure periods to compensate injured parties and property damage (excluding property diminution) and to provide for clean-up and restoration. The obligation may be imposed on the facility operator, assumed by the state, or both.

The Commission is to provide a means of compensation to persons injured or property damaged during the institutional control period, due to the radioactive and waste management nature of the regional facility. The fund, based upon a users' surcharge, is also available for third party relief during operational and post-closure periods but only to the extent other resources and means are not available from the host state or other entities. Liability is limited to no more than the amount contained in the fund.

Article X. Severability and Construction

This article contains legal "boiler plate" to assure that if any provision of the compact is invalidated by the courts, the remaining provisions shall remain in full force and effect. Guidance is also given for liberal construction of specific compact provisions.

NORTHEAST INTERSTATE LOW-LEVEL RADIOACTIVE WASTE MANAGEMENT COMPACT

OFFICIAL DRAFT
FEBRUARY, 1983

COALITION OF NORTHEASTERN GOVERNORS

ARTICLE I. POLICY AND PURPOSE

There is hereby created the Northeast Interstate Low-Level Radioactive Waste Management Compact. The party states recognize that the Congress has declared that each state is responsible for providing for the availability of capacity, either within or outside its borders, for disposal of low-level radioactive waste generated within its borders, except for waste generated as a result of atomic energy defense activities of the federal government, as defined in the Low-Level Radioactive Waste Policy Act (P.L. 96-573, "The Act"), or federal research and development activities. They also recognize that the management of low-level radioactive waste is handled most efficiently on a regional basis. The party states further recognize that the Congress of the United States, by enacting the Act has provided for and encouraged the development of regional low-level radioactive waste compacts to manage such waste. The party states recognize that the long-term, safe and efficient management of low-level radioactive waste generated within the region requires that sufficient capacity to manage such waste be properly provided.

In order to promote the health and safety of the region, it is the policy of the party states to: enter into a regional low-level radioactive waste management compact as a means of facilitating an interstate cooperative effort, provide for proper transportation of low-level waste generated in the region, minimize the number of facilities required to effectively and efficiently manage low-level radioactive waste generated in the region, encourage the reduction of the amounts of low-level waste generated in the region, distribute the costs, benefits, and obligations of proper low-level radioactive waste management equitably among the party states, and ensure the environmentally sound and economical management of low-level radioactive waste.

ARTICLE II. DEFINITIONS

As used in this compact, unless the context clearly requires a different construction:

a. "commission" means the Northeast Interstate Low-Level Radioactive Waste Commission established pursuant to Article IV of this compact;

b. "custodial agency" means the agency of the government designated to act on behalf of the government owner of the regional facility;

c. "disposal" means the isolation of low-level radioactive waste from the biosphere inhabited by man and his food chains;

d. "facility" means a parcel of land, together with the structures, equipment and improvements thereon or appurtenant thereto, which is used or is being developed for the treatment, storage or disposal of low-level waste, but shall not include on-site treatment or storage by a generator;

e. "generator" means a person who produces or processes low-level waste, but does not include persons who only provide a service by arranging for the collection, transportation, treatment, storage or disposal of wastes generated outside the region;

f. "high-level waste" means 1) the highly radioactive material resulting from the reprocessing of spent nuclear fuel, including liquid waste produced directly in reprocessing and any solid material derived from such liquid waste that contains fission products in sufficient concentration; and 2) any other highly radioactive material determined by the federal government as requiring permanent isolation;

g. "host state" means a party state in which a regional facility is located or being developed;

h. "institutional control" means the continued observation, monitoring, and care of the regional facility following transfer of control of the regional facility from the operator to the custodial agency;

i. "low-level waste" means radioactive waste that 1) is neither high-level waste nor transuranic waste, nor spent nuclear fuel, nor by-product material as defined in section 11e (2) of the Atomic Energy Act of 1954 as amended; and 2) is classified by the federal government as low-level waste, consistent with existing law; but does not include waste generated as a result of atomic energy defense activities of the federal government, as defined in P.L. 96-573, or federal research and development activities;

j. "party state" means any state which is a signatory party in good standing to this compact;

k. "person" means an individual, corporation, business enterprise or other legal entity, either public or private and their legal successors;

l. "post-closure observation and maintenance" means the continued monitoring of a closed regional facility to ensure the integrity and environmental safety of the site through compliance with applicable licensing and regulatory requirements; prevention of unwarranted intrusion, and correction of problems;

m. "region" means the entire area of the party states;

n. "regional facility" means a facility as defined in this section which has been designated or accepted by the Commission;

o. "state" means a state of the United States, the District of Columbia, the Commonwealth of Puerto Rico, the Virgin Islands or any other territory subject to the laws of the United States;

p. "storage" means the holding of waste for treatment or disposal;

q. "transuranic waste" means waste material containing radionuclides with an atomic number greater than 92 which are excluded from shallow land burial by the federal government;

r. "treatment" means any method, technique or process, including storage for decay, designed to change the physical, chemical or biological characteristics or composition of any waste in order to render such waste safer for transport or disposal, amenable for recovery, convertible to another usable material or reduced in volume;

s. "waste" means low-level radioactive waste as defined in this section;

t. "waste management" means the storage, treatment, transportation, and disposal, where applicable, of waste.

ARTICLE III. RIGHTS AND OBLIGATIONS

a. There shall be provided within the region one or more regional facilities which, together with such other facilities as may be made available to the region, will provide sufficient capacity to manage all wastes generated within the region.

1. Regional facilities shall be entitled to waste generated

within the region, unless otherwise provided by the Commission. To the extent regional facilities are available, no waste generated within a party state shall be exported to facilities outside the region unless such exportation is approved by the Commission and the affected host state(s).

2. After January 1, 1986, no person shall deposit at a regional facility waste generated outside the region, and further, no regional facility shall accept waste generated outside the region, unless approved by the Commission and the affected host state(s).

b. The rights, responsibilities and obligations of each party state to this compact are as follows:

1. Each party state shall have the right to have all wastes generated within its borders managed at regional facilities, and shall have the right of access to facilities made available to the region through agreements entered into by the Commission pursuant to Article IV(i)(11). The right of access by a generator within a party state to any regional facility is limited by the generator's adherence to applicable state and federal laws and regulations and the provisions of this compact.

2. To the extent not prohibited by federal law, each party state shall institute procedures which will require shipments of low-level waste generated within or passing through its borders to be consistent with applicable federal packaging and transportation regulations and applicable host state packaging and transportation regulations for management of low-level waste; provided, however, that these practices shall not impose

unreasonable, burdensome impediments to the management of low-level waste in the region. Upon notification by a host state that a generator, shipper, or carrier within the party state is in violation of applicable packaging or transportation regulations, the party state shall take appropriate action to ensure that such violations do not recur.

3. Each party state may impose reasonable fees upon generators, shippers, or carriers to recover the cost of inspections and other practices under this compact.
4. Each party state shall encourage generators within its borders to minimize the volumes of waste requiring disposal.
5. Each party state has the right to rely on the good faith performance by every other party state of acts which ensure the provision of facilities for regional availability and their use in a manner consistent with this compact.
6. Each party state shall provide to the Commission any data and information necessary for the implementation of the Commission's responsibilities, and shall establish the capability to obtain any data and information necessary to meet its obligation as herein defined.
7. Each party state shall have the capability to host a regional facility in a timely manner and to ensure the post-closure observation and maintenance, and institutional control of any regional facility within its borders.
8. No non-host party state shall be liable for any injury to persons or property resulting from the operation of a

regional facility or the transportation of waste to a regional facility; however, if the host state itself is the operator of the regional facility, its liability shall be that of any private operator.

c. The rights, responsibilities and obligations of a host state are as follows:

   1. To the extent not prohibited by federal law, a host state shall ensure the timely development and the safe operation, closure, post-closure observation and maintenance, and institutional control of any regional facility within its borders.

   2. In accordance with procedures established in Articles V and IX, the host state shall provide for the establishment of a reasonable structure of fees sufficient to cover all costs related to the development, operation, closure, post-closure observation and maintenance, and institutional control of a regional facility. It may also establish surcharges to cover the regulatory costs, incentives, and compensation associated with a regional facility; provided, however, that without the express approval of the Commission, no distinction in fees or surcharges shall be made between persons of the several states party to this compact.

   3. To the extent not prohibited by federal law, a host state may establish requirements and regulations pertaining to the management of waste at a regional facility; provided, however, that such requirements shall not impose unreasonable impediments to the management of low-level waste within the region. Nor may a host state or a subdivision impose such restrictive requirements on the

siting or operation of a regional facility that, alone or as a whole, they serve as unreasonable barriers or prohibitions to the siting or operation of such a facility.

4. Each host state shall submit to the Commission annually a report concerning each operating regional facility within its borders. The report shall contain projections of the anticipated future capacity and availability of the regional facility, a financial audit of its operation, and other information as may be required by the Commission; and in the case of regional facilities in institutional control or otherwise no longer operating, the host states shall furnish such information as may be required on the facilities still subject to their jurisdiction.
5. A host state shall notify the Commission immediately if any exigency arises which requires the permanent, temporary, or possible closure of any regional facility located therein at a time earlier than projected in its most recent annual report to the Commission. The Commission may conduct studies, hold hearings, or take such other measures to ensure that the actions taken are necessary and compatible with the obligations of the host state under this compact.

ARTICLE IV. THE COMMISSION

a. There is hereby created the Northeast Interstate Low-Level Radioactive Waste Commission. The Commission shall consist of one member from each party state to be appointed by the Governor according to procedures of each party state, except that a host state shall have two members during the period that it has an operating regional facility. The Governor shall notify the Commission in writing of the identity of the member and one alternate, who may act on behalf of the member only in the member's absence.

b. Each Commission member shall be entitled to one vote. No action of the Commission shall be binding unless a majority of the total membership cast their vote in the affirmative.

c. The Commission shall elect annually from among its members a presiding officer and such other officers as it deems appropriate. The Commission shall adopt and publish, in convenient form, such rules and regulations as are necessary for due process in the performance of its duties and powers under this compact.

d. The Commission shall meet at least once a year and shall also meet upon the call of the presiding officer, or upon the call of a party state member.

e. All meetings of the Commission shall be open to the public with reasonable prior public notice. The Commission may, by majority vote, close a meeting to the public for the purpose of considering sensitive personnel or legal matters. All Commission actions and decisions shall be made in open meetings and appropriately recorded. A roll call vote may be required upon request of any party state or the presiding officer.

f. The Commission may establish such committees as it deems necessary.

g. The Commission may appoint, contract for, and compensate such limited staff as it determines necessary to carry out its duties and functions. The staff shall serve at the Commission's pleasure irrespective of the civil service, personnel or other merit laws of any of the party states or the federal government and shall be compensated from funds of the Commission.

h. The Commission shall adopt an annual budget for its operations.

i. The Commission shall have the following duties and powers:

    1. The Commission shall receive and act on the application of a non-party state to become an eligible state in accordance with Article VII(e).

    2. The Commission shall receive and act on the application of an eligible state to become a party state in accordance with Article VII(b).

    3. The Commission shall submit an annual report to and otherwise communicate with the governors and the presiding officer of each body of the legislature of the party states regarding the activities of the Commission.

    4. Upon request of party states, the Commission shall mediate disputes which arise between the party states regarding this compact.

    5. The Commission shall develop, adopt and maintain a regional management plan to ensure safe and effective management of waste within the region, pursuant to Article V.

    6. The Commission may conduct such legislative or adjudicatory hearings, and require such reports, studies, evidence and testimony as are necessary to perform its duties and functions.

    7. The Commission shall establish by regulation, after public notice and opportunity for comment, such procedural regulations as deemed necessary to ensure efficient

operation, the orderly gathering of information, and the protection of the rights of due process of affected persons.

8. In accordance with the procedures and criteria set forth in Article V, the Commission shall accept a host state's proposed facility as a regional facility.

9. In accordance with the procedures and criteria set forth in Article V, the Commission may designate, by a two-thirds vote, host states for the establishment of needed regional facilities. The Commission shall not exercise this authority unless the party states have failed to voluntarily pursue the development of such facilities.

10. The Commission may require of and obtain from party states, eligible states seeking to become party states, and non-party states seeking to become eligible states, data and information necessary for the implementation of Commission responsibilities.

11. The Commission may enter into agreements with any person, state, regional body, or group of states for the importation of waste into the region and for the right of access to facilities outside the region for waste generated within the region. Such authorization to import requires a two-thirds majority vote of the Commission, including an affirmative vote of the representatives of the host state in which any affected regional facility is located. This shall be done only after the Commission and the host state have made an assessment of the affected facilities' capability to handle such wastes and of relevant environmental, economic, and public health

factors, as defined by the appropriate regulatory authorities.

12. The Commission may, upon petition, grant an individual generator or group of generators in the region the right to export wastes to a facility located outside the region. Such grant of right shall be for a period of time and amount of waste and on such other terms and conditions as determined by the Commission and approved by the affected host states.
13. The Commission may appear as an intervenor or party in interest before any court of law, federal, state or local agency, board or commission that has jurisdiction over the management of wastes. Such authority to intervene or otherwise appear shall be exercised only after a two-thirds vote of the Commission. In order to represent its views, the Commission may arrange for any expert testimony, reports, evidence or other participation as it deems necessary.
14. The Commission may impose sanctions, including but not limited to, fines, suspension of privileges or revocation of the membership of a party state in accordance with Article VII. The Commission shall have the authority to revoke, in accordance with Article VII(g), the membership of a party state that creates unreasonable barriers to the siting of a needed regional facility or refuses to accept host state responsibilities upon designation by the Commission.
15. The Commission shall establish by regulation criteria for and shall review the fee and surcharge systems in accordance with Articles V and IX.

16. The Commission shall review the capability of party states to ensure the siting, operation, post-closure observation and maintenance, and institutional control of any facility within its borders.
17. The Commission shall review the compact legislation every five years prior to federal congressional review provided for in the Act, and may recommend legislative action.
18. The Commission has the authority to develop and provide to party states such rules, regulations and guidelines as it deems appropriate for the efficient, consistent, fair and reasonable implementation of the compact.

j. There is hereby established a Commission operating account. The Commission is authorized to expend monies from such account for the expenses of any staff and consultants designated under section (g) of this Article and for official Commission business. Financial support for the Commission account shall be provided as follows:

1. Each eligible state, upon becoming a party state, shall pay $70,000 to the Commission, which shall be used for administrative costs of the Commission.
2. The Commission shall impose a "commission surcharge" per unit of waste received at any regional facility as provided in Article V.
3. Until such time as at least one regional facility is in operation and accepting waste for management, or to the extent that revenues under paragraphs (1) and (2) of this section are unavailable or insufficient to cover the approved annual budget of the Commission, each party state shall pay an apportioned amount of the difference between

the funds available and the total budget in accordance with the following formula:

(a) 20 percent in equal shares;

(b) 30 percent in the proportion that the population of the party state bears to the total population of all party states, according to the most recent U.S. census;

(c) 50 percent in the proportion that the waste generated for management in each party state bears to the total waste generated for management in the region for the most recent calendar year in which reliable data are available, as determined by the Commission.

k. The Commission shall keep accurate accounts of all receipts and disbursements. An independent certified public accountant shall annually audit all receipts and disbursements of Commission accounts and funds and submit an audit report to the Commission. Such audit report shall be made a part of the annual report of the Commission required by Article IV(i) (3).

l. The Commission may accept, receive, utilize and dispose for any of its purposes and functions any and all donations, loans, grants of money, equipment, supplies, materials and services (conditional or otherwise) from any state or the United States or any subdivision or agency thereof, or interstate agency, or from any institution, person, firm or corporation. The nature, amount and condition, if any, attendant upon any donation, loan, or grant accepted pursuant to this paragraph, together with the identity of the donor, grantor, or lender, shall be detailed in the annual report of the Commission. The Commission shall by rule establish guidelines for the acceptance of donations, loans, grants of money, equipment, supplies, materials and services. This shall provide that no donor, grantor or lender may derive unfair or unreasonable advantage in any proceeding before the Commission.

m. The Commission herein established is a body corporate and politic, separate and distinct from the party states and shall be so liable for its own actions. Liabilities of the Commission shall not be deemed liabilities of the party states, nor shall members of the Commission be personally liable for action taken by them in their official capacity.

1. The Commission shall not be responsible for any costs or expenses associated with the creation, operation, closure, post-closure observation and maintenance, and institutional control of any regional facility, or any associated regulatory activities of the party states.
2. Except as otherwise provided herein, this compact shall not be construed to alter the incidence of liability of any kind for any act, omission, or course of conduct. Generators, shippers and carriers of wastes, and owners and operators of sites shall be liable for their acts, omissions, conduct, or relationships in accordance with all laws relating thereto.

n. The United States district courts in the District of Columbia shall have original jurisdiction of all actions brought by or against the Commission. Any such action initiated in a state court shall be removed to the designated United States district court in the manner provided by Act of June 25, 1948 as amended (28 U.S.C. §1446). This section shall not alter the jurisdiction of the United States Court of Appeals for the District of Columbia Circuit to review the final administrative decisions of the Commission as set forth in the paragraph below.

o. The United States Court of Appeals for the District of Columbia Circuit shall have jurisdiction to review the final administrative decisions of the Commission.

1. Any person aggrieved by a final administrative decision may obtain review of the decision by filing a petition for review within 60 days after the Commission's final decision.
2. In the event that review is sought of the Commission's decision relative to the designation of a host state, the Court of Appeals shall accord the matter an expedited review, and, if the Court does not rule within 90 days after a petition for review has been filed, the Commission's decision shall be deemed to be affirmed.
3. The courts shall not substitute their judgment for that of the Commission as to the decisions of policy or weight of the evidence on questions of fact. The Court may affirm the decision of the Commission or remand the case for further proceedings if it finds that the petitioner has been aggrieved because the finding, inferences, conclusions or decisions of the Commission are:
    a. in violation of the Constitution of the United States;
    b. in excess of the authority granted to the Commission by this compact;
    c. made upon unlawful procedure to the detriment of any person;
    d. arbitrary or capricious or characterized by abuse of discretion or clearly unwarranted exercise of discretion.

4. The Commission shall be deemed to be acting in a legislative capacity except in those instances where it decides, pursuant to its rules and regulations, that its determinations are adjudicatory in nature.

ARTICLE V. HOST STATE SELECTION AND DEVELOPMENT AND OPERATION OF REGIONAL FACILITIES

a. The Commission shall develop, adopt, maintain, and implement a regional management plan to ensure the safe and efficient management of waste within the region. The plan shall include the following:

1. a current inventory of all generators within the region;
2. a current inventory of all facilities within the region, including information on the size, capacity, location, specific waste being handled, and projected useful life of each facility;
3. consistent with considerations for public health and safety as defined by appropriate regulatory authorities, a determination of the type and number of regional facilities which are presently necessary and projected to be necessary to manage waste generated within the region;
4. reference guidelines, as defined by appropriate regulatory authorities, for the party states for establishing the criteria and procedures to evaluate locations for regional facilities.

b. The Commission shall develop and adopt criteria and procedures for reviewing a party state which volunteers to host a regional facility within its borders. These criteria shall be developed with public notice and shall include the following factors: the capability of the volunteering party state to host a regional facility in a timely manner and to ensure its post-closure observation and maintenance, and institutional control; and the anticipated economic feasibility of the proposed facility.

1. Any party state may volunteer to host a regional facility within its borders. The Commission may set terms and conditions to encourage a party state to volunteer to be the first host state.
2. Consistent with the review required above, the Commission shall, upon a two-thirds affirmative vote, designate a volunteering party state to serve as a host state.

c. If all regional facilities required by the regional management plan are not developed pursuant to section (b), or upon notification that an existing facility will be closed, or upon determination that an additional regional facility is or may be required, the Commission shall convene to consider designation of a host state.

1. The Commission shall develop and adopt procedures for designating a party state to be a host state for a regional facility. The Commission shall base its decision on the following criteria:
   a. the health, safety and welfare of citizens of the party states as defined by the appropriate regulatory authorities;
   b. the environmental, economic, and social effects of a regional facility on the party states;

   The Commission shall also base its decision on the following criteria:

   c. economic benefits and costs;
   d. the volumes and types of waste generated within each party state;
   e. the minimization of waste transportation; and

f. the existence of regional facilities within the party states.

2. Following its established criteria and procedures, the Commission shall designate by a two-thirds affirmative vote a party state to serve as a host state. A current host state shall have the right of first refusal for a succeeding regional facility.

3. The Commission shall conduct such hearings and studies, and take such evidence and testimony as is required by its approved procedures prior to designating a host state. Public hearings shall be held upon request in each candidate host state prior to final evaluation and selection.

4 A party state which has been designated as a host state by the Commission and which fails to fulfill its obligations as a host state may have its privileges under the compact suspended or membership in the compact revoked by the Commission.

d. Each host state shall be responsible for the timely identification of a site and the timely development and operation of a regional facility. The proposed facility shall meet geologic, environmental and economic criteria which shall not conflict with applicable federal and host state laws and regulations.

1. To the extent not prohibited by federal law, a host state may regulate and license any facility within its borders.

2. To the extent not prohibited by federal law, a host state shall ensure the safe operation, closure, post-closure observation and maintenance, and institutional control of a facility, including adequate financial assurances by the operator and adequate emergency response procedures. It shall periodically review and report to the Commission on the status of the

post-closure and institutional control funds and the remaining useful life of the facility.

3. A host state shall solicit comments from each party state and the Commission regarding the siting, operation, financial assurances, closure, post-closure observation and maintenance, and institutional control of a regional facility.

e. A host state intending to close a regional facility within its borders shall notify the Commission in writing of its intention and the reasons therefore.

1. Except as otherwise provided, such notification shall be given to the Commission at least five years prior to the scheduled date of closure.

2. A host state may close a regional facility within its borders in the event of an emergency or if a condition exists which constitutes a substantial threat to public health and safety. A host state shall notify the Commission in writing within three days of its action and shall, within 30 working days, show justification for the closing.

3. In the event that a regional facility closes before an additional or new facility becomes operational, the Commission shall make interim arrangements for the storage or disposal of waste generated within the region until such time that a new regional facility is operational.

f. Fees and surcharges shall be imposed equitably upon all users of a regional facility, based upon criteria established by the Commission.

1. A host state shall, according to its lawful administrative procedures, approve fee schedules to be charged to all users of the regional facility within its borders. Except as provided herein, such fee schedules shall be established by the operator

of a regional facility, under applicable state regulations, and shall be reasonable and sufficient to cover all costs related to the development, operation, closure, post-closure observation and maintenance, institutional control of the regional facility. The host state shall determine a schedule for contributions to the post-closure observation and maintenance, and institutional control funds. Such fee schedules shall not be approved unless the Commission has been given reasonable opportunity to review and make recommendations on the proposed fee schedules.

2. A host state may, according to its lawful administrative procedures, impose a state surcharge per unit of waste received at any regional facility within its borders. The state surcharge shall be in addition to the fees charged for waste management. The surcharge shall be sufficient to cover all reasonable costs associated with administration and regulation of the facility. The surcharge shall not be established unless the Commission has been provided reasonable opportunity to review and make recommendations on the proposed state surcharge.
3. The Commission shall impose a commission surcharge per unit of waste received at any regional facility. The total monies collected shall be adequate to pay the costs and expenses of the Commission and shall be remitted to the Commission on a timely basis as determined by the Commission. The surcharge may be increased or decreased as the Commission deems necessary.
4. Nothing herein shall be construed to limit the ability of the host state, or the political subdivision in which the regional facility is situated, to impose surcharges for purposes

including, but not limited to, host community compensation and host community development incentives. Such surcharges shall be reasonable and shall not be imposed unless the Commission has been provided reasonable opportunity to review and make recommendations on the proposed surcharge. Such surcharge may be recovered through the approved fee and surcharge schedules provided for in this section.

ARTICLE VI. OTHER LAWS AND REGULATIONS

a. Nothing in this compact shall be construed to abrogate or limit the regulatory responsibility or authority of the U.S. Nuclear Regulatory Commission or of an Agreement State under Section 274 of the Atomic Energy Act of 1954, as amended.

b. The laws or portions of those laws of a party state that are not inconsistent with this compact remain in full force.

c. Nothihg in this compact shall make unlawful the continued development and operation of any facility already licensed for development or operation on the date this compact becomes effective.

d. No judicial or administrative proceeding pending on the effective date of the compact shall be affected by the compact.

e. Except as provided for in Article III(b)(2) and (c)(3), this compact shall not affect the relations between and the respective internal responsibilities of the government of a party state and its subdivisions.

f. The generation, treatment, storage, transportation, or disposal of waste generated by the atomic energy defense activities of the federal government, as defined in P.L. 96-573, or federal research and development activities are not affected by this compact.

g. To the extent that the rights and powers of any state or political subdivision to license and regulate any facility within its borders and to impose taxes, fees, and surcharges on the waste managed at that regional facility do not operate as an unreasonable impediment to the transportation, treatment or disposal of waste, such rights and powers shall not be diminished by this compact.

h. No party state shall enact any law or regulation or attempt to enforce any measure which is inconsistent with this compact. Such measures may provide the basis for the Commission to suspend or terminate a party state's membership and privileges under this compact.

i. All laws and regulations, or parts thereof of any party state or subdivision or instrumentality thereof which are inconsistent with this compact are hereby repealed and declared null and void. Any legal right, obligation, violation or penalty arising under such laws or regulations prior to the enactment of this compact, or not in conflict with it, shall not be affected.

j. Subject to Article III(c)(2), no law or regulation of a party state or subdivision or instrumentality thereof may be applied so as to restrict or make more costly or inconvenient access to any regional facility by the generators of another party state than for the generators of the state where the facility is situated.

k. No law, ordinance, or regulation of any party state or any subdivision or instrumentality thereof shall prohibit, suspend, or unreasonably delay, limit or restrict the operation of a siting or licensing agency in the designation, siting, or licensing of a regional facility. Any such provision in existence at the time of ratification of this compact is hereby repealed.

ARTICLE VII. ELIGIBLE PARTIES, WITHDRAWAL, REVOCATION, ENTRY INTO FORCE, TERMINATION

a. The initially eligible parties to this compact shall be the eleven states of Connecticut, Delaware, Maine, Maryland, Massachusetts, New Hampshire, New Jersey, New York, Pennsylvania, Rhode Island, and Vermont. Initial eligibility will expire June 30, 1984.

b. Each state eligible to become a party state to this compact shall be declared a party state upon enactment of this compact into law by the state, repeal of all statutes or statutory provisions that pose unreasonable impediments to the capability of the state to host a regional facility in a timely manner, and upon payment of the fees required by Article IV(j)(1). An eligible state may become a party to this compact by an executive order by the governor of the state and upon payment of the fees required by Article IV(j)(1). However, any state which becomes a party state by executive order shall cease to be a party state upon the final adjournment of the next general or regular session of its legislature, unless this compact has by then been enacted as a statute by the state and all statutes and statutory provisions that conflict with the compact have been repealed.

c. The compact shall become effective in a party state upon enactment by that state. It shall not become initially effective in the region until enacted into law by three party states and consent given to it by the Congress.

d. The first three states eligible to become party states to this compact which adopt this compact into law as required in

Article VII(b) shall immediately, upon the appointment of their Commission members, constitute themselves as the Northeast Interstate Low-Level Radioactive Waste Commission. They shall cause legislation to be introduced in the Congress which grants the consent of the Congress to this compact, and shall do those things necessary to organize the Commission and implement the provisions of this compact.

1. The Commission shall be the judge of the qualifications of the party states and of its members and of their compliance with the conditions and requirements of this compact and of the laws of the party states relating to the enactment of this compact.
2. All succeeding states eligible to become party states to this compact shall be declared party states pursuant to the provisions of section (b) of this Article.

e. Any state not expressly declared eligible to become a party state to this compact in section (a) of this Article may petition the Commission to be declared eligible. The Commission may establish such conditions as it deems necessary and appropriate to be met by a state requesting eligibility as a party state to this compact pursuant to the provisions of this section, including a public hearing on the application. Upon satisfactorily meeting such conditions and upon the affirmative vote of two-thirds of the Commission, including the affirmative vote of the representatives of the host states in which any affected regional facility is located, the petitioning state shall be eligible to become a party state to this compact and may become a party state in the same manner as those states declared eligible in section (a) of this Article.

f. No state holding membership in any other regional compact for the management of low-level radioactive waste may become a member of this compact.

g. Any party state which fails to comply with the provisions of this compact or to fulfill its obligations hereunder may have its privileges suspended or, upon a two-thirds vote of the Commission, after full opportunity for hearing and comment, have its membership in the compact revoked. Revocation shall take effect one year from the date the affected party state receives written notice from the Commission of its action. All legal rights of the affected party state established under this compact shall cease upon the effective date of revocation, except that any legal obligations of that party state arising prior to revocation will not cease until they have been fulfilled. As soon as practicable after a Commission decision suspending or revoking party state status, the Commission shall provide written notice of the action and a copy of the resolution to the governors and the presiding officer of each body of the state legislatures of the party states, and to chairmen of the appropriate committees of the Congress.

h. Any party state may withdraw from this compact by repealing its authorization legislation, and all legal rights under this compact of the party state cease upon repeal. However, no such withdrawal shall take effect until five years after the Governor of the withdrawing state has given notice in writing of such withdrawal to the Commission and to the governor of each party state. No withdrawal shall affect any liability already incurred by or chargeable to a party state prior to that time.

1. Upon receipt of the notification, the Commission shall, as soon as practicable, provide copies to the governors and the presiding officer of each body of the state legislatures of the party states, and to the chairmen of the appropriate committees of the Congress.
2. A regional facility in a withdrawing state shall remain available to the region for five years after the date the Commission receives written notification of the intent to withdraw or until the prescheduled date of closure, whichever occurs first.

i. This compact may be terminated only by the affirmative action of the Congress or by the repeal of all laws enacting the compact in each party state. The Congress may by law withdraw its consent every five years after the compact takes effect.

1. The consent given to this compact by the Congress shall extend to any future admittance of new party states under sections (b) and (e) of this Article.
2. The withdrawal of a party state from this compact under section (h) or the revocation of a state's membership in this compact under section (g) of this Article shall not affect the applicability of the compact to the remaining party states.

ARTICLE VIII. PENALTIES

a. Each party state, consistent with federal and host state regulations and laws, shall enforce penalties against any person not acting as an official of a party state for violation of ihis compact in the party state. Each party state acknowledges that the shipment to a host state of waste packaged or transported in violation of applicable laws and regulations can result in the imposition of sanctions by the host state. These sanctions may include, but are not limited to, suspension or revocation of the violator's right of access to the facility in the host state.

b. Without the express approval of the Commission, it shall be unlawful for any person to dispose of any low-level waste within the region except at a regonal facility; provided, however, that this restriction shall not apply to waste which is permitted by applicable federal or state regulations to be discarded without regard to its radioactivity.

c. Unless specifically approved by the Commission and affected host state(s) pursuant to Article IV, it shall be a violation of this compact for: 1) any person to deposit at a regional facility waste not generated within the region; 2) any regional facility to accept waste not generated within the region; and 3) any person to export from the region waste generated within the region.

d. Primary responsibility for enforcing violations of the law will rest with the affected state or states. The Commission, upon a two-thirds vote of its members, may bring action to seek enforcement or appropriate remedies against violators of the provisions and regulations for this compact as provided for in Article IV.

ARTICLE IX. COMPENSATION PROVISIONS

a. The responsibility for ensuring compensation and clean-up during the operational and post-closure periods rests with the host state, as set forth herein.

    1. The host state shall ensure the availability of funds and procedures for compensation of injured persons, including facility employees, and property damage (except any possible claims for diminution of property values) due to the existence

and operation of a regional facility, and for clean-up and restoration of the facility and surrounding areas.

2. The state may satisfy this obligation by requiring bonds, insurance, compensation funds, or any other means or combination of means, imposed either on the facility operator or assumed by the state itself, or both. Nothing in this alters the liability of any person or governmental entity under applicable state and federal laws.

b. The Commission shall provide a means of compensation for persons injured or property damaged during the institutional control period due to the radioactive and waste management nature of the regional facility. This responsibility may be met by a special fund, insurance, or other means.

1. The Commission is authorized, at its discretion, to impose a waste management surcharge, to be collected by the operator or owner of the regional facility; to establish a separate insurance entity, formed by but separate from the Commission itself, but under such terms and conditions as it decides, and exempt from state insurance regulation; to contract with this company or other entity for coverage; or to take any other measures, or combination of measures, to implement the goals of this section.

2. The existence of this fund or other means of compensation shall not imply any liability by the Commission, the non-host party states, or any of their officials and staff, which are exempted from liability by other provisions of this compact. Claims or suits for compensation shall be directed against the fund, the insurance company, or other entity, unless the Commission, by regulation, directs otherwise.

c. Not withstanding any other provisions, the Commission fund, insurance, or other means of compensation shall also be available for third party relief during the operational and post-closure periods, as the Commission may direct, but only to the extent that no other funds, insurance, tort compensation, or other means are available from the host state or other entitites, under section a. of this Article or otherwise; provided, that this Commission contribution shall not apply to clean-up or restoration of the regional facility and its environs during the operational and post-closure period.

d. The liability of the Commission's fund, insurance entity, or any other means of compensation shall be limited to the amount currently contained therein; provided that the Commission may set some lower limit to ensure the integrity and availability of the fund or other entity for liability.

ARTICLE X. SEVERABILITY AND CONSTRUCTION

The provisions of this compact shall be severable, and if any phrase, clause, sentence or provision of this compact is declared by a federal court of competent jurisdiction to be contrary to the Constitution of the United States or the applicability thereof to any government, agency, person or circumstance is held invalid, the validity of the remainder of this compact and the applicability thereof to any other government, agency, person or circumstance shall not be affected thereby. The provisions of this compact shall be liberally construed to give effect to the purposes thereof.

NORTHEAST LOW-LEVEL RADIOACTIVE
WASTE MANAGEMENT PROJECT

LOW-LEVEL RADIOACTIVE WASTE IN THE NORTHEAST

Disposal Volume Projections

COALITION OF NORTHEASTERN GOVERNORS
CONEG
POLICY RESEARCH CENTER, INC.

Report of the Technical Subcommittee

October 1982

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CONEG
Policy Research Center, Inc.
Suite 382
400 North Capitol Street, N.W.
Washington, D.C. 20001

I. OVERVIEW AND RECOMMENDATIONS

The Northeastern states, with support of the Coalition of Northeastern Governors (CONEG), are developing compact(s) for the disposal and management of low-level radioactive waste (LLRW) generated in the eleven northeastern states (Connecticut, Delaware, Maine, Maryland, Massachusetts, New Hampshire, New Jersey, New York, Pennsylvania, Rhode Island, and Vermont). The Policy Working Group for the project, composed of executive and legislative representatives of the states, requested the preparation of a Regional Facilities Needs Analysis. As part of this regional analysis, the Technical Subcommittee has prepared a waste volume projection report for the Northeast, a key step in determining the type and number of facilities needed to meet the needs of the region.

The Technical Subcommittee has made a projection of future low-level radioactive waste to the year 2000 based on existing waste volume data and anticipated growth in the Northeast states. Aware of the difficulties involved with any long range projection – unforeseen events can drastically change projections based on current assumptions – the Technical Subcommittee believes that waste volume projections should be reviewed annually as updated information becomes available.

The Technical Subcommittee made the following findings based upon a conservative projection methodology:

- Volumes of low-level waste produced annually in the eleven states individually and collectively are expected to grow continually through the year 2000 with the rate of increase varying by state (see Figure 1).

- By the year 2000, the Northeast is projected to generate 58,000 cubic meters of low-level waste annually, about 1.9 times the current average.

- Based on current estimates, 47 percent of the total projected waste volume in the year 2000 will be produced by nuclear power plants, compared to the current average of 54 percent. Non-reactor wastes will equal 53 percent of the total in the year 2000 compared to the current 46 percent.

Based upon these findings, the Technical Subcommittee made the following recommendations to the Policy Working Group:

- Waste volume projections should be reviewed annually as updated information becomes available;

- Given the confusion in legal responsibilities for disposal of certain high activity decommissioning waste created by 10 CFR 61 and the Low-Level Radioactive Waste Policy Act, the Policy Working Group should seek specific clarification from the Federal Government concerning the disposition of these wastes. Based on the federal response, the compact may wish not to accept responsibility for these wastes;

- Fuel cycle or industrial facilities that require decommissioning and/or major decontamination which yield large quantities of high volume, low specific activity wastes should be identified so future waste volume projections may accurately assess the impact of decommissioning and decontamination.

II. METHODOLOGY

The total disposal volumes generated in the years 1979, 1980, and 1981 is contained in a previous Technical Subcommittee report (see Appendix A).[1] The volumes of low-level radioactive waste disposed by the Northeast were obtained from the disposal site operators and corrected to reflect the waste volumes handled by interstate brokers. Table 1 lists the waste volumes, corrected for the state-of-origin of waste disposed, and the average annual disposal volume for each northeastern state.

Except for Rhode Island, the average of the corrected annual volumes of these three years was used as the basis for the waste volume projection (see Rhode Island section of state discussions). In order to use the best and most complete information available for this projection, the 1979 data were corrected by using 1979 broker data where available,

TABLE 1
NORTHEAST LOW-LEVEL RADIOACTIVE WASTE DISPOSAL VOLUMES: 1979-81*
(volumes in cubic meters)

State	1979	1980	1981	Average
Connecticut	4,192	3,406	3,483	3,694
Delaware	160	41	46	82
Maine	415	431	416	421
Maryland	1,176	1,217	1,502	1,298
Massachusetts	4,877	6,292	8,509	6,559
New Hampshire	77	6	20	34
New Jersey	2,410	4,964	3,465	3,613
New York	8,639	6,213	5,533	6,795
Pennsylvania	7,347	8,389	5,877	7,204
Rhode Island	535	1,565	283	794
Vermont	385	560	421	455
Northeast	30,213	33,084	29,555	30,949
United States	79,914	106,780	87,758	91,484

*The 1979, 1980, and 1981 waste volumes have been corrected to account for broker collected waste volumes. The 1979 data were corrected based on specific data where available. When specific data were not available, the 1980 broker data were used since most brokers indicate little change between 1979 and 1980 in volumes and states of origin.

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and by assuming the same distribution among brokers as in 1980 where specific 1979 data was not available. The Technical Subcommittee believes this method provides a more representative base number than the use of uncorrected data or by excluding 1979 data entirely.

Commercial low-level radioactive waste is produced by over 3,000 radioactive materials licensees in the Northeast. Generally, these licenses can be categorized by their activities. They are nuclear power plants (boiling water reactors and pressurized water reactors), institutions (e.g., hospitals, research facilities, and universities) and industries (e.g., radiopharmaceuticals, consumer products manufacturers, and research reactors). For the purpose of projecting annual waste volumes, wastes are categorized into two types: reactor and non-reactor wastes.

Reactor Waste Volume Projection

As of August 1982, the Northeast contained 22 nuclear power plant reactors with operating licenses and 11 reactors under construction. Table 2 lists these reactors and the estimated dates of commercial operation.[2]

Actual disposal volumes for operating plants were obtained from effluent release reports filed with the U.S. Nuclear Regulatory Commission by each utility. Hence volume projections for existing nuclear power plants were based on past waste generation which reflects plant design and operating history. For operating plants, the basis for annual volume projections was determined by averaging the volumes produced over the past three years (1979-81). This average volume was assumed to be produced yearly beginning with 1982 for the life of the plant's operation.

TABLE 2

NUCLEAR REACTORS — NORTHEAST STATES
Operating and Under Construction

United States	Net MWe	Type	Reactor Supplier	Generator Supplier	Architect Engineer	Constructor	Construction status (%)	Commercial Operation orig. schedule†	Commercial Operation actual or expected
NORTHEAST									
Baltimore Gas & Electric Co.									
• Calvert Cliffs 1 (Lusby, Md.)	850	PWR	C-E	GE	Bechtel	Bechtel	100	1/73	5/75
• Calvert Cliffs 2 (Lusby, Md.)	850	PWR	C-E	W	Bechtel	Bechtel	100	1/74	4/77
Boston Edison Co.									
• Pilgrim 1 (Plymouth, Mass.)	670	BWR	GE	GE	Bechtel	Bechtel	100	10/71	12/72
Connecticut Yankee Atomic Power Co.									
• Haddam Neck (Haddam Neck, Conn.)	582	PWR	W	W	S&W	S&W	100	11/67	1/68
Consolidated Edison Co.									
• Indian Point 2 (Indian Point, N.Y.)	873	PWR	W	W	UE&C	Westco	100	6/69	7/74
Duquesne Light Co.									
• Beaver Valley 1 (Shippingport, Pa.)	833	PWR	W	W	S&W	S&W	100	6/73	4/77
Beaver Valley 2 (Shippingport, Pa.)	833	PWR	W	W	S&W	DLC/S&W	53.3	10/78	5/86
Duquesne Light Co. and U.S. Department of Energy									
• Shippingport (Shippingport, Pa.)	60	LWBR	W	W	S&W		100		12/57
GPU Nuclear Corporation									
• Oyster Creek 1 (Forked River, N.J.)	620	BWR	GE	GE	B&R/GE	B&R	100	2/68	12/69
• Three Mile Island 1 (Londonderry Twp., Pa.)	792	PWR	B&W	GE	Gilbert	UE&C	100	9/71	9/74
• Three Mile Island 2 (Londonderry Twp., Pa.)	906	PWR	B&W	W	B&R	UE&C	100	5/73	12/78
Long Island Lighting Co.									
Shoreham (Brookhaven, N.Y.)	820	BWR	GE	GE	S&W	Utility	90	/75	3/83
Maine Yankee Atomic Power Co.									
• Maine Yankee (Wiscasset, Me.)	825	PWR	C-E	W	S&W	S&W	100		12/72
Niagara Mohawk Power Corp.									
• Nine Mile Point 1 (Scriba, N.Y.)	610	BWR	GE	GE	Utility	S&W	100	11/68	12/69
Nine Mile Point 2 (Scriba, N.Y.)	1080	BWR	GE	GE	S&W	S&W	44	7/78	10/86
Northeast Utilities									
• Millstone 1 (Waterford, Conn.)	660	BWR	GE	GE	Ebasco	Ebasco	100	6/69	12/70
• Millstone 2 (Waterford, Conn.)	870	PWR	C-E	GE	Bechtel	Bechtel	100	4/74	12/75
Millstone 3 (Waterford, Conn.)	1150	PWR	W	GE	S&W	S&W	46	3/79	5/86
Pennsylvania Power & Light Co.									
Susquehanna 1 (Berwick, Pa.)	1050	BWR	GE	GE	Bechtel	Bechtel	92	3/79	5/83
Susquehanna 2 (Berwick, Pa.)	1050	BWR	GE	GE	Bechtel	Bechtel	65	9/81	late 84
Philadelphia Electric Co.									
• Peach Bottom 2 (Peach Bottom, Pa.)	1065	BWR	GE	GE	Bechtel	Bechtel	100	/71	7/74
• Peach Bottom 3 (Peach Bottom, Pa.)	1065	BWR	GE	GE	Bechtel	Bechtel	100	/73	12/74
Limerick 1 (Pottstown, Pa.)	1065	BWR	GE	GE	Bechtel	Bechtel	74	5/75	4/85
Limerick 2 (Pottstown, Pa.)	1065	BWR	GE	GE	Bechtel	Bechtel	30	1/80	10/87
Power Authority of the State of New York									
• Indian Point 3 (Indian Point, N.Y.)	965	PWR	W	W	UE&C	Westco	100	7/71	8/76
• James A. FitzPatrick (Scriba, N.Y.)	821	BWR	GE	GE	S&W	S&W	100	1/73	7/75
Public Service Co. of New Hampshire									
Seabrook 1 (Seabrook, N.H.)	1150	PWR	W	GE	UE&C	UE&C	75	11/79	2/84
Seabrook 2 (Seabrook, N.H.)	1150	PWR	W	GE	UE&C	UE&C	20	5/81	5/86
Public Service Electric & Gas Co.									
• Salem 1 (Salem, N.J.)	1090	PWR	W	W	Utility	UE&C	100	/71	6/77
• Salem 2 (Salem, N.J.)	1115	PWR	W	W	Utility	UE&C	100	/73	10/81
Hope Creek 1 (Salem, N.J.)	1070	BWR	GE	GE	Bechtel	Bechtel	36	3/75	12/86
Rochester Gas & Electric Corp.									
• Robert E. Ginna (Ontario, N.Y.)	490	PWR	W	W	Gilbert	Bechtel	100	11/69	3/70
Vermont Yankee Nuclear Power Corp.									
• Vermont Yankee (Vernon, Vt.)	514	BWR	GE	GE	Ebasco	Ebasco	100	10/70	11/72
Yankee Atomic Electric Co.									
• Yankee (Rowe, Mass.)	175	PWR	W	W	S&W	S&W	100	1/61	6/61

For a plant coming on line, the amount of waste expected to be generated was determined by comparing that plant with a similar one in operation. A similar plant was chosen by comparing type of reactor, reactor vendor, operating utility, and architect engineer in that order. Any difference in the rated power was compensated by multiplying the quantity of waste produced by the similar plant by the ratio of their rated power levels. It was assumed that a new plant coming on line would produce no waste in its first year of commercial operation, one-half the amount of a similar plant's waste in its second calendar year, and the full amount by its third year and beyond. This assumption was based on a review of the past history of waste generation by other plants during their initial years of operation and is consistent with those of the U.S. Nuclear Regulatory Commission (NRC) and the U.S. Department of Energy (DOE).

Non-Reactor Waste Volume Projection

There is no specific uniform reporting mechanism for non-reactor waste as exists for reactor waste. The base annual volumes for non-reactor waste were determined by subtracting the avarage reactor waste volumes from the average total waste volumes.

Future volumes of non-reactor waste were assumed to increase linearly starting in 1982 by an annual increment of 6.7 percent of the base volume. This assumption was derived from the NRC Draft Environmental Impact Statement (DEIS) of 10 CFR 61,[3] and is consistent with comparable DOE estimates of 2 percent to 10 percent annually.[4]

It should be noted that the projection of indefinite linear growth of non-reactor low-level waste volumes was based on past experience and does not take into account the potential mitigative impacts of further regulatory and economic influences which in all likelihood will encourage volume reduction. The Technical Subcommittee recognizes that an equilibrium or saturation point may exist beyond which the non-reactor low-level waste generation rate will stabilize, if not decline. However, in its final analysis, the Technical Subcommittee concluded that at this time use of a linear growth factor provides an appropriately conservative projection for regional planning and assessment purposes. Future waste generation data should be carefully monitored for possible revision of this assumption.

Other Low-Level Radioactive Wastes

A significant source of waste not considered in this analysis comes from the decommissioning or major decontamination activities of nuclear power plants and other facilities.

Based on the assumption of a 30 to 40 year operating life, no major decommissioning of nuclear power plants are expected which will affect the waste volume projection through the year 2000. The upcoming scheduled decommissioning of Pennsylvania's Shippingport Atomic Power Station, which began operation in 1954, will be the responsibility of the U.S. Department of Energy, and the waste will be shipped to a DOE site. New York's Indian Point Unit 1 which is no longer in commercial operation will most likely be decommissioned along with Unit 2, which commenced operation in 1974. Massachusetts' Yankee Nuclear Power Station which commenced operation in 1961, is the oldest commercial reactor in the Northeast. While it could be decommissioned before the year 2000, no date has been set. The projections, which assumed this plant will continue to operate through the year 2000, account to some extent for any decommissioning activities that may be conducted prior to this date. Any attempts at extrapolating waste volumes beyond the year 2000 should take into account the additional waste volumes generated from reactor decommissioning activities.

Even if a date for decommissioning is established, it is difficult to accurately project the quantity of low-level waste that will be generated because that quantity is dependent upon the mode and the timing of the decommissioning activities. The Draft Generic EIS on Decommissioning of Nuclear Facilities estimates that immediate dismantlement of a large light water reactor will generate about 18,000 cubic meters of low-level radioactive waste.[5] This estimated volume is roughly comparable to the total amount of waste generated during the reactor's useful lifetime. It is estimated that deferring dismantlement by 50 years or using the entombment mode could reduce the volume of waste to be disposed by up to an order of magnitude.

In addition, it is expected that the decommissioning by any mode of a light water reactor will generate about 300 cubic meters of waste that will not be suitable for shallow land burial under proposed NRC regulations 10 CFR 61. Since this waste is not considered high level waste by definition, it may be deemed the responsibility of the compact. Given the confusion created by the regulatory language of 10 CFR 61, which does not provide for shallow land burial of this waste, it is recommended that the compact not accept responsibility for disposal of this high activity waste, and that its disposition be resolved at the national level by the Federal Government.

Decommissioning and/or major decontamination of other fuel cycle or industrial facilities could result in the generation of large quantities of high volume, low specific activity waste. In certain cases, the quantity of this type of waste could be comparable to the volumes of waste generated by the decommissioning of reactors. It is recommended that these facilities be identified as soon as possible along with their expected decommissioning dates. These facilities should then be examined in more detail so an estimate of the potential impact of their decommissioning can be included in the waste volume projections.

In considering other sources of low-level waste, it should be recognized that over 30 former Manhattan Engineering District/Atomic Energy Commission sites in the Northeast have been identified by the U.S. Department of Energy under its Formerly Utilized Sites Remedial Action Program (FUSRAP) as possibly requiring some degree of decontamination. A site for the disposal of the potentially large volumes of waste from this program has not been identified and DOE may look to the regional low-level waste disposal facilities to accept the waste. It should be noted that FUSRAP waste is generally high-volume, low activity contaminated soil. The FUSRAP Program should be monitored closely for its impact on regional low-level waste projections and corresponding disposal facility needs.

III. STATE DISCUSSIONS

The following state specific discussions describe each Northeast state's base year waste volume and projected waste volumes for reactor and non-reactor wastes. The volume projections reflect increases attributed to nuclear power plants coming on line after 1982 and growth in non-reactor wastes.

Connecticut

For the last three years, it is estimated that Connecticut generated an average of 3,694 cubic meters of LLRW annually from all sources. From NRC data, 3,211 cubic meters of this was generated by reactors, leaving 483 cubic meters as non-reactor LLRW.

The quantity of LLRW projected to be generated in the next several years is expected to increase slightly. The majority of this increase is due to the start-up of the Millstone Unit 3, which is scheduled to come on line in mid-1986. The projections are based on Beaver Valley historical data, since both Millstone Unit 3 and Beaver Valley 1 are Westinghouse Pressurized Water Reactors (PWRs) with Stone and Webster as the architect engineer.

Non-reactor waste generation in Connecticut is projected to increase at a constant rate of 32 cubic meters per year.

Delaware

For the last three years, it is estimated that Delaware generated an average of 82 cubic meters of LLRW annually. Since there are no reactors in Delaware, all waste is non-reactor. The non-reactor waste generation is projected to increase at a constant rate of about 5.5 cubic meters per year.

Maine

For the last three years, it is estimated that Maine generated an average of 421 cubic meters of LLRW from all sources. From NRC data, 397 cubic meters of this total was generated by reactors, leaving 24 cubic meters as non-reactor LLRW.

The quantity of LLRW produced over the next several years is expected to increase only very slightly. Since no new reactors are coming on line, the reactor waste is expected to remain approximately the same through year 2000. The only increase is due to non-reactor waste, which is projected to increase at a constant rate of about 1.6 cubic meters per year.

Maryland

For the last three years, it is estimated that Maryland generated an average of 1,298 cubic meters of LLRW annually from all sources. From NRC data, 394 cubic meters of this total was generated by reactors, leaving 904 cubic meters as non-reactor LLRW.

The quantity of reactor LLRW is not expected to change prior to the year 2000 because there are no new reactors planned. Non-reactor waste generation is projected to increase at a constant rate of about 61 cubic meters per year.

Massachusetts

For the last three years, it is estimated that Massachusetts generated an average of 6,559 cubic meters of LLRW annually from all sources. From NRC data, 2,581 cubic meters of this total was generated by reactors, leaving 3,978 cubic meters as non-reactor LLRW.

The quantity of LLRW projected to be generated in the next several years is expected to steadily increase. However, the reactor waste is not expected to increase prior to year 2000 since no new plants will be coming on line. The increase is due to a projected annual increase of non-reactor waste of about 267 cubic meters per year.

New Hampshire

For the past three years, it is estimated that New Hampshire generated an average of 34 cubic meters of LLRW annually. Since the state does not have any operating nuclear power plants, all of the waste can be attributed to non-reactor sources.

Reactor waste will start being produced in a few years as Seabrook Units 1 and 2 are expected to enter commercial operation in 1984 and 1986 respectively. Their projected waste is based upon historical data from Indian Point 3, since all three are Westinghouse PWRs with UE&C as the architect engineer.

Non-reactor waste generation is projected to increase at a constant rate of about 2.3 cubic meters per year.

New Jersey

For the last three years, it is estimated that New Jersey generated an average of 3,613 cubic meters of LLRW annually from all sources. From NRC data, 2,526 cubic meters of this total was generated by reactors, leaving 1,087 cubic meters as non-reactor waste.

Reactor wastes are projected to increase because Salem 2 began commercial operation in 1981 and Hope Creek will begin in 1986. Salem 2 waste projections are based on historical data from Salem 1, since both are Westinghouse PWRs with the utility doing the architect engineering. Hope Creek's projections are based on data from Peach Bottom, because both are General Electric Boiling Water Reactors (BWRs) with Bechtel as the architect engineer.

Non-reactor waste generation is projected to increase at a constant rate of 73 cubic meters per year.

New York

For the last three years, it is estimated that New York generated an average of 6,795 cubic meters of LLRW annually from all sources. From NRC data, 3,341 cubic meters of this total was generated by reactors, leaving 3,454 cubic meters as non-reactor LLRW.

The quantity of LLRW projected to be generated in New York is expected to increase significantly. The majority of the increase is due primarily to the expected start-ups of Shoreham and Nine Mile Point 2 in 1983 and 1986 respectively. Both Shoreham and Nine Mile Point 2 projections are based upon historical data from Fitzpatrick because all are G.E. Boiling Water Reactors with Stone and Webster as the architect engineer.

Non-reactor waste generation is expected to increase at a constant rate of about 231 cubic meters per year.

Pennsylvania

For the last three years, it is estimated that Pennsylvania generated an average of 7,204 cubic meters of LLRW annually from all sources. From NRC data, 3,814 cubic meters of this total was generated by reactors, leaving 3,390 cubic meters as non-reactor LLRW.

The quantity of LLRW projected to be generated in Pennsylvania is expected to dramatically increase in the next several years due primarily to the expected start-up of several Boiling Water Reactors (BWRs). Susquehanna Steam Units 1 and 2 are expected to enter commercial operation in mid-1983 and 1984 respectively, and their projected waste quantities are based on historical data from Peach Bottom Units 2 and 3. Limerick Units 1 and 2 are scheduled for commercial operation in mid-1985 and 1987 respectively, and their projected waste quantities are also based on data from the operation of Peach Bottom. Beaver Valley Unit 2, a Westinghouse Pressurized Water Reactor (PWR) is scheduled for commercial operation in mid-1986, and the projected waste volumes from this plant are based on data from Beaver Valley Unit 1.

The projection of waste generated by Three Mile Island presents a special problem because of the uncertainties involved with this situation. It was assumed for projection purposes that TMI-1 will generate the same average quantity of waste as it generated from 1975-78, which was prior to the shutdown caused by the TMI-2 accident. The waste projection for TMI-2 is based on an average of the best and worst case estimates for expected waste generation from the NRC Programmatic EIS for Clean-up (NUREG-0683). For projection purposes it was assumed that this waste will be generated annually over the next eight years. This rate of generation is assumed to continue at the same level, providing a conservative estimate to account for eventual decommissioning or restart. It is expected that the specific activity of the majority of this TMI-2 clean-up LLRW will be much less than that which is routinely produced by operating reactors.

Non-reactor waste generation in Pennsylvania is projected to increase at a constant rate of about 227 cubic meters per year.

Rhode Island

For the last three years, it is estimated that Rhode Island generated an average of 794 cubic meters of LLRW annually. However, over 90 percent of Rhode Island's volume resulted from the decommissioning of a uranium recovery facility. When the data is adjusted to exclude this one time source, the estimated annual average is 80 cubic meters. Since Rhode Island has no nuclear power plants and none are planned in the future, all current and future LLRW is non-reactor. The quantity of LLRW generation is projected to increase at a constant rate of 5.4 cubic meters per year.

Vermont

For the last three years, it is estimated that Vermont generated an average of 455 cubic meters of LLRW annually from all sources. From NRC data, 398 cubic meters of this total was generated by reactors leaving 57 cubic meters as non-reactor LLRW.

Reactor waste generation is not expected to increase during the study period since no new reactors are planned. Non-reactor waste generation is projected to increase at a constant rate of 3.8 cubic meters per year.

IV. SUMMARY

The volumes of low-level radioactive wastes produced annually in the Northeast are projected to grow continually through the year 2000. Table 3 provides the projection of annual waste volumes for reactor, non-reactor, and total low-level radioactive wastes for the period 1982-2000.

Figure 1 illustrates the annual generation rate and Figure 2 illustrates the annual cumulative volume of waste generated in the region.

Table 4 summarizes the state by state waste volumes for three key years: the base year; 1986 (the year in which regional compacts may exclude waste generated outside the region), and 2000. By the year 2000, the Northeast is projected to generate 58,000 cubic meters of LLRW per year, about 1.9 times the current average.

Based on these estimates, in the year 2000, 47 percent of the total projected waste volume will be produced by nuclear power plants compared to the current average of 54 percent and non-reactor waste will equal 53 percent of the total in the year 2000 compared to the current 46 percent.

TABLE 3

NORTHEAST LOW-LEVEL RADIOACTIVE WASTE DISPOSAL VOLUME PROJECTIONS: 1982-2000
Total and By Source
(volumes in cubic meters)

	Base	1982	1983	1984	1985	1986	1987	1988	1989	1990	1995	2000
Connecticut												
Reactor	3,211	3,211	3,211	3,211	3,211	3,211	3,382	3,552	3,552	3,552	3,552	3,552
Non-Reactor	483	515	548	580	612	645	677	710	742	774	936	1,098
Total	3,694	3,726	3,759	3,791	3,823	3,856	4,059	4,262	4,294	4,326	4,488	4,650
Delaware												
Reactor	-	-	-	-	-	-	-	-	-	-	-	-
Non-Reactor	82	87	93	98	104	109	115	120	126	131	159	186
Total	82	87	93	98	104	109	115	120	126	131	159	186
Maine												
Reactor	397	397	397	397	397	397	397	397	397	397	397	397
Non-Reactor	24	26	27	29	30	32	34	35	37	38	47	55
Total	421	423	424	426	427	429	431	432	434	435	444	452
Maryland												
Reactor	394	394	394	394	394	394	394	394	394	394	394	394
Non-Reactor	904	965	1,025	1,086	1,146	1,207	1,267	1,328	1,389	1,449	1,752	2,055
Total	1,298	1,359	1,419	1,480	1,540	1,601	1,661	1,722	1,783	1,843	2,146	2,449
Massachusetts												
Reactor	2,581	2,581	2,581	2,581	2,581	2,581	2,581	2,581	2,581	2,581	2,581	2,581
Non-Reactor	3,978	4,245	4,511	4,778	5,044	5,311	5,577	5,844	6,110	6,377	7,709	9,042
Total	6,559	6,826	7,092	7,359	7,625	7,892	8,158	8,425	8,691	8,958	10,290	11,623
New Hampshire												
Reactor	-	-	-	-	183	365	548	731	731	731	731	731
Non-Reactor	34	36	39	41	43	45	48	50	52	55	66	77
Total	34	36	39	41	226	410	596	781	783	786	797	808
New Jersey												
Reactor	2,526	2,965	3,404	3,404	3,404	3,404	4,017	4,631	4,631	4,631	4,631	4,631
Non-Reactor	1,087	1,160	1,233	1,305	1,378	1,451	1,524	1,597	1,670	1,742	2,107	2,471
Total	3,613	4,125	4,637	4,709	4,782	4,855	5,541	6,228	6,301	6,373	6,738	7,102
New York												
Reactor	3,341	3,341	3,341	3,741	4,141	4,141	4,667	5,193	5,193	5,193	5,193	5,193
Non-Reactor	3,454	3,685	3,917	4,148	4,380	4,611	4,843	5,074	5,305	5,537	6,694	7,851
Total	6,795	7,026	7,258	7,889	8,521	8,752	9,510	10,267	10,498	10,730	11,887	13,044
Pennsylvania												
Reactor	3,814	3,814	3,814	4,427	5,654	6,880	7,616	8,353	8,966	8,966	8,966	8,966
Non-Reactor	3,390	3,617	3,844	4,071	4,299	4,526	4,753	4,980	5,207	5,434	6,570	7,705
Total	7,204	7,431	7,658	8,498	9,953	11,406	12,369	13,333	14,173	14,400	15,536	16,671
Rhode Island*												
Reactor	-	-	-	-	-	-	-	-	-	-	-	-
Non-Reactor	80	85	91	96	101	107	112	118	123	128	155	182
Total	80	85	91	96	101	107	112	118	123	128	155	182
Vermont												
Reactor	398	398	398	398	398	398	398	398	398	398	398	398
Non-Reactor	57	61	65	68	72	76	80	84	88	91	110	130
Total	455	459	463	466	470	474	478	482	486	489	508	528
Northeast Region												
Reactor	16,662	17,101	17,540	18,553	20,363	21,771	24,000	26,230	26,843	26,843	26,843	26,843
Non-Reactor	13,573	14,482	15,393	16,300	17,209	18,120	19,030	19,940	20,849	21,756	26,305	30,852
Total	30,235	31,583	32,933	34,853	37,572	39,891	43,030	46,170	47,692	48,599	53,148	57,695

*Rhode Island's projection base was determined by subtracting the waste generated from the one time decommissioning of a uranium recovery facility which had composed 90 percent of Rhode Island's 1979, 1980, 1981 average. All other projection bases were based on the three year average.

CONEG Low-Level Radioactive Waste Project
September 1982

TABLE 4

NORTHEAST LOW-LEVEL RADIOACTIVE WASTE SELECTED ANNUAL PROJECTED DISPOSAL VOLUMES*

(volumes in cubic meters)

	Base Year	1986*	2000
Connecticut	3,694	3,856	4,650
Delaware	82	109	186
Maine	421	429	452
Maryland	1,298	1,601	2,449
Massachusetts	6,559	7,892	11,623
New Hampshire	34	410	808
New Jersey	3,613	4,855	7,102
New York	6,795	8,752	13,044
Pennsylvania	7,204	11,406	16,671
Rhode Island	80	107	182
Vermont	455	474	528
Northeast Total	30,235	39,891	57,695

*After 1986, regional compacts may exclude waste generated in other regions.

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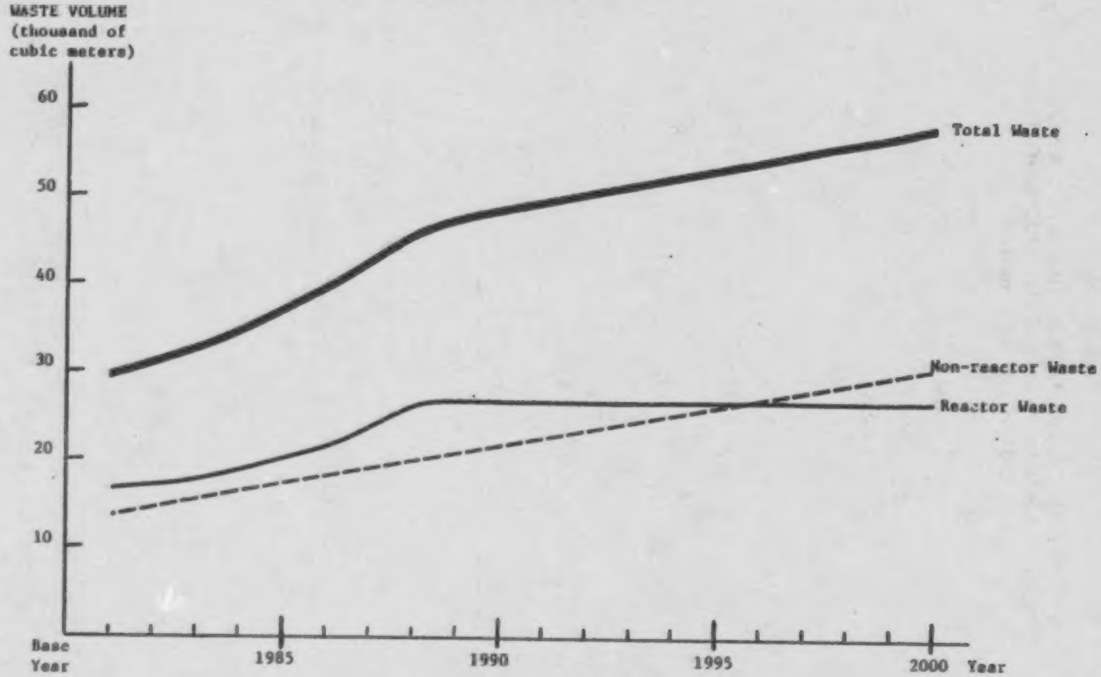
September 1982

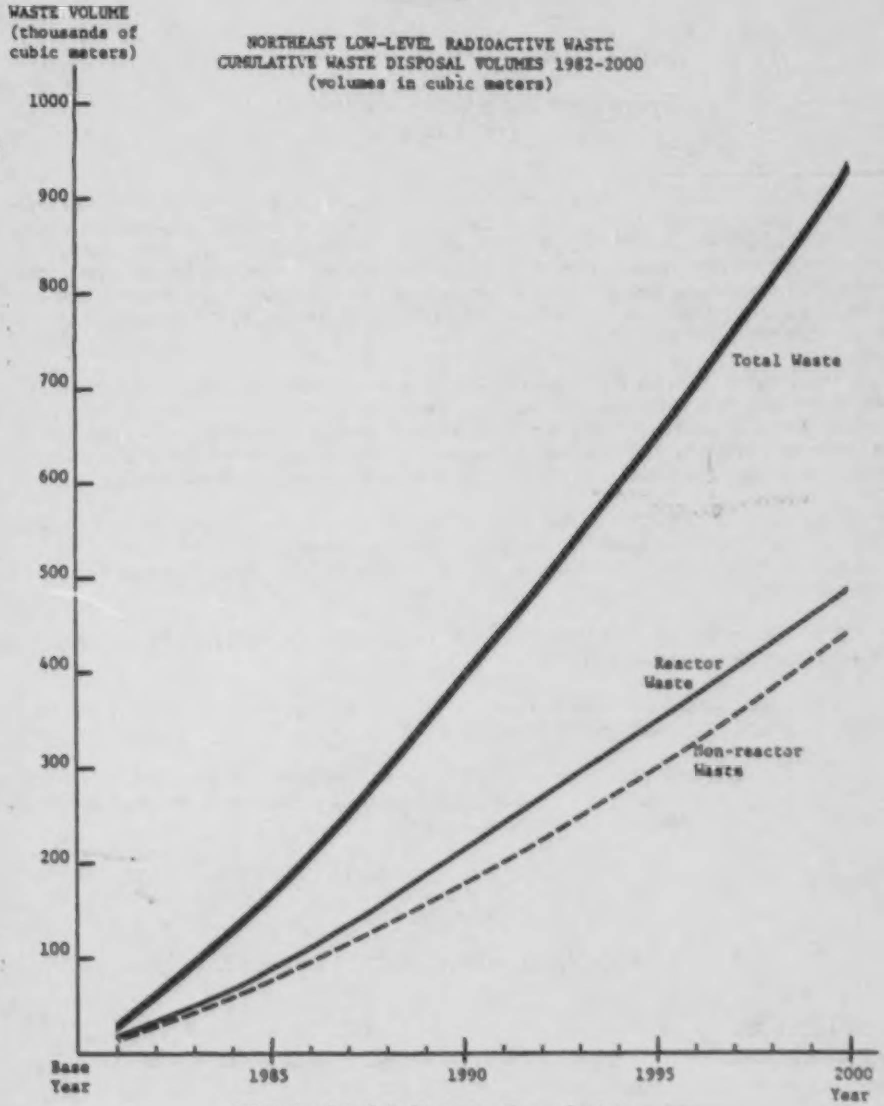
NORTHEAST LOW-LEVEL RADIOACTIVE WASTE
ANNUAL PROJECTED WASTE DISPOSAL VOLUMES 1982-2000
(volumes in cubic metets)



CONEG Low-Level Radioactive Waste Project
September 1982

FIGURE 2

NORTHEAST LOW-LEVEL RADIOACTIVE WASTE
CUMULATIVE WASTE DISPOSAL VOLUMES 1982-2000
(volumes in cubic meters)



CONEG Low-Level Radioactive Waste Project
September 1982

APPENDIX A

Summary and Recommendations:
Northeast Low-Level Radioactive Waste Disposal
Volumes 1979, 1980, 1981
Technical Subcommittee Report
April 29, 1982

The data base for making projections was developed from past waste disposal volumes. The Technical Subcommittee examined several sources of information, including the U.S. Nuclear Regulatory Commission, the Department of Energy, generators, disposal operators and states before determining that the best and most consistent information on disposal on each state was provided by disposal operators. Such reported volumes contain some ambiguity since water handled by brokers are attributed to the brokers' home state rather than the state of origin.

Data were obtained from the brokers in Illinois, Maryland, Mississippi, New Jersey, New York and Pennsylvania who handle wastes for generators on the Northeast. The brokers' waste volumes for 1980 and 1981 were redistributed to the state of origin. Data for 1979 could not be corrected on a consistent fair manner since volume reductions or unplanned temporary closures at three sites that year caused extended storage.

Beginning in 1982, disposal site operators intend to implement more detailed manifest systems which make it possible to identify the location of a waste's origin. The data will be reviewed by the Technical Subcommittee on later evaluations of future waste disposal volumes.

The Technical Subcommittee makes two recommendations to aid in the accuracy of updated waste disposal volumes:

- a mechanism to require reporting of radioactive waste generation and disposal on the Northeast should be established;
- a mechanism to determine disposal of non-regional waste collected by brokers on the Northeast region should be established to permit effective identification and monitoring of such waste after 1986.

APPENDIX B

TECHNICAL SUBCOMMITTEE MEMBERS

CONNECTICUT

Kevin McCarthy
Department of Environmental Protection

DELAWARE

Harry W. Otto
Division of Environmental Control
Department of Natural Resources and Environmental Control

MAINE

John Brochu
Bureau of Oil and Hazardous Materials
Department of Environmental Protection

MAINE (Continued)

Jack Krueger
Bureau of Oil and Hazardous Materials
Department of Environmental Protection

MARYLAND

Ronald Nelson
Department of Health

Rick Collins
Department of Health

MASSACHUSETTS

Robert Hallisey
Radiation Control Program
Department of Public Health

NEW HAMPSHIRE

Jack Stanton
Bureau of Environmental Health
Department of Health and Welfare

Diane Tefft
Radiological Health Program
Department of Health and Welfare

NEW JERSEY

Frank Cosolito
Bureau of Radiation Protection
Department of Environmental Protection

Jeannette Eng
Bureau of Radiation Protection
Department of Environmental Protection

NEW YORK

Jack Spath
Energy and Research Development
Authority

PENNSYLVANIA

Thomas M. Gerusky
Bureau of Radiation Protection
Department of Environmental Resources

William Dornsife
Bureau of Radiation Protection
Department of Environmental Resources

RHODE ISLAND

James Hickey
Division of Occupational Health
and Radiation
Department of Health

VERMONT

Raymond N. McCandless
Division of Occupational Heatlh
and Radiation
Department of Health

FOOTNOTES

[1] CONEG Low-Level Radioactive Waste Technical Subcommittee, "Northeast Low-Level Radioactive Waste Disposal Volumes for the Years 1979, 1980, and 1981", (Washington, D.C., April 29, 1982).

[2] "World List of Nuclear Power Plants", Nuclear News, Volume 25, Number 10, August, 1982.

[3] U.S. Nuclear Regulatory Commission, Office of Nuclear Material Safety and Safeguards, Draft Environmental Impact Statement on 10 CFR Part 61 Licensing Requirements for Land Disposal of Radioactive Waste, NUREG-0782, Volume III (Washington, D.C., September 1981), pp. D-24-25.

[4] U.S. Department of Energy, Low-Level Radioactive Waste Management Report: Response to Public Law 96-573, (Washington, D.C., March 1981), pp. 8-9.

[5] U.S. Nuclear Regulatory Commission, Draft Generic Environmental Impact Statement on Decommissioning Nuclear Facilities, NUREG-0586 (Washington, D.C., January 1981).

PREPARED STATEMENT OF LEONARD C. SLOSKY

My name is Leonard Slosky. I am the Science and Technology Advisor to Governor Lamm of Colorado. I have represented the State of Colorado on, and served as chairman of, the negotiating group which developed the Rocky Mountain Low-Level Radioactive Waste Compact. I welcome the opportunity to share with you the experience of the Rocky Mountain states in developing an interstate compact on low-level radioactive waste.

History of State Action

As was the case in most states, low-level radioactive waste disposal was a non-issue in Colorado until Nevada and Washington temporarily closed the commercial disposal sites in their states and South Carolina reduced the intake of the site located in that state in 1979. At that point, we suddenly became aware of the vulnerability of the commercial low-level waste disposal system in the United States. Had the two western sites remained closed, critical health care and educational functions of government would have to have been curtailed. In Colorado, 80 percent of the low-level waste was generated by state institutions, such as universities and hospitals, which are also the generators which have traditionally had the least capacity to store wastes. We were therefore faced with the potential of having to curtail or completely halt such essential practices as medical diagnoses; treatments such as cancer therapy; health research; and graduate education programs which produce low-level waste as a byproduct.

Fortunately, as the sites in Washington and Nevada re-opened, the situation did not reach that critical stage. However, the experience did bring many of us to the realization that:

1. Activities which are essential to the health and welfare of the State's citizens are dependent on a few critical facilities over which we had absolutely no control — namely the disposal sites.

2. The western states in which existing low-level waste disposal facilities are located generate a very small amount of the waste received at those facilities and receive very little benefit for accepting large amounts of waste.

Whether we like it or not, limiting the waste coming into a site from other states has become a political necessity. Although the importance of the goods and services whose development and use result in low-level radioactive wastes is widely acknowledged by society, no one wishes to live near the facilities which are necessary for disposing of that waste. Opposition to a waste facility grows exponentially as the amount of waste for disposal from other states increases. The consequence is that it becomes extremely difficult, if not impossible, to establish the necessary disposal facilities unless a system is developed to ensure an equitable sharing of responsibilities among states.

From this realization, Colorado and a number of other states concluded that the states would have to take a larger responsibility in assuring the proper disposal, preferably on a regional basis, of the low-level waste generated within their borders. This principle, which was affirmed by the National Governors' Association, the State Planning Council on Radioactive Waste Management, and the National Conference of State Legislatures, became the cornerstone of the Low-Level Waste Policy Act of 1980. The State of Colorado has been particularly conscious of this principle, considering that state institutions generate the majority of the low-level waste in Colorado and other Rocky Mountain states.

Colorado's next step in addressing the low-level waste issue was to determine how to assure adequate and reliable disposal capacity for the needs of its low-level waste producers. Recognizing the problem of the states currently hosting low-level waste disposal sites and not wanting to repeat their experience of having a disposal facility in which the great majority of waste was generated in other states, our first and primary criterion was to be able to control the origin of the waste allowed for disposal.

The most obvious and, at first glance, simplest solution would have been to develop a facility for the disposal of only that low-level waste generated in Colorado. This would have eliminated the need to develop an interstate compact on low-level radioactive waste disposal (requiring negotiations on a highly politically charged issue among the governors of six states); the adoption of an interstate compact by very independently minded state legislatures without substantial change, and Congressional ratification.

To this end, Colorado analyzed legal precedents and arguments regarding a state-owned and -operated site for disposing of only that waste generated in the State. There are those who argue that a state can legally exclude out-of-state waste from a site it owns and operates. While the probability of success of such an approach may be moderately good, the consequences of failure are devastating. In addition, without an interstate compact there is nothing to prevent a private firm from entering a state and developing a commercial facility that could accept low-level waste from throughout the country. We therefore concluded that, to ensure our control over a low-level waste disposal facility, an interstate compact was the safest and most reasonable approach.

Development of the Rocky Mountain Compact

Following the assessment of options available to the State, work began in earnest on the lengthy compact negotiating process. The first official meeting of the governors' representatives from several western states was held in December 1980, two weeks before Congressional passage of the Low-Level Waste Policy Act. In fact, as early as mid-1980 the western states had begun preliminary meetings on the compact issue. The December meeting marked a turning point, however, with the decision by the western states to split into Northwest and Southwest compact regions. The Southwest region gradually evolved over the following year into the Rocky Mountain Compact.

Throughout 1981, the governors' representatives of the Rocky Mountain states met frequently, determining the philosophy and policy they wished to follow in the Rocky Mountain region and hammering out the details of the Compact to embody those principles. This was an arduous task. It involved decisions going to the very heart of political philosophy, from determinations of the equitable sharing of responsibilities and commitments among the party states to state versus regional authority. It required a high degree of commitment, intelligence, and integrity on the part of the compact negotiators, which is reflected in the scope and language of the Compact. The Rocky Mountain Compact negotiating group operated under a self-imposed deadline of January 1982 to reach agreement on the Compact and have the document ready for introduction in the 1982 sessions of the state legislatures.

Status of the Rocky Mountain Compact

The State of Colorado adopted the Rocky Mountain Compact into law in May 1982. Because of short budgetary sessions or no legislative sessions in 1982, the Rocky Mountain Compact did not gain legislative approval in any other state that year. The Compact was adopted by the Wyoming Legislature on February 23, 1983. The Compact is currently pending in the New Mexico and Nevada legislatures.

I anticipate legislative approval by the states of Nevada and New Mexico within the next month or two, after which Congressional ratification will be sought. Although the State of Utah has joined the Northwest Compact, it has maintained its links with the Rocky Mountain Compact in the event a new disposal facility in this region proves to serve its needs better than the Northwest Compact's. The Rocky Mountain Compact has not yet been introduced in the State of Arizona legislature.

Provisions of the Rocky Mountain Compact

Attachments A and B are the text of the Compact as adopted by Colorado (including Colorado's implementing legislation) and a summary of the key provisions of the compact, respectively.[1] Through the establishment of the Rocky Mountain Compact, the States of Colorado, Arizona, Nevada, New Mexico, Utah and Wyoming have devised an equitable system to fulfill their responsibilities for assuring adequate disposal facilities for the low-level waste generated within their borders while preserving the health and safety of their citizens.

Host State Identification. The principal feature of the Rocky Mountain Compact is

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1. C.R.S. 24-60-2201 et. seq., 1973
2. C.R.S. 24-60-2200 Article 3 C., 1973

its mechanism for identifying host states. The Compact requires any member state which generates at least 20 percent of the region's waste to host a low-level waste facility.[2] In the event that two or more states fall into this category, it is up to the Compact Board to decide when and how those states will fulfill their responsibilities. This system was established because of the extreme split in the region between four very small generating states and two states, Colorado and Arizona, which generate the majority of the region's waste. It has been the philosophy of the Rocky Mountain region that the large generating states have a commensurately larger interest and responsibility for ensuring adequate disposal capacity and that the small generating states, which will be contributing only a small fraction of the waste, should not be required to carry the burden of hosting the disposal facility. This decision was relatively easy to make, considering that in 1981 Colorado generated 70 percent of the region's waste and that by 1985, when Arizona's nuclear power plant is expected to be fully operational, 95 percent of the region's waste will be generated by these two states. (Attachment C contains 1981 and projected future low-level waste generation rates for the Rocky Mountain Region.)

Export Prohibition. The Rocky Mountain Compact prohibits the export of low-level waste for management outside the region.[3] A prohibition against waste export would be superfluous if every low-level waste management facility were controlled by a regional compact. However, if an outside facility were available, export of waste outside the region would seriously jeopardize the economic viability of the Rocky Mountain facility. To guard against this eventuality, the Rocky Mountain states agreed to be cautious and include an export prohibition.

Fee Regulation. A fee regulation provision was included because the Compact will create a captive market for the regional low-level waste management facilities.[4] Since the small volume of waste generated in the Rocky Mountain region is not sufficient to support a number of facilities there will be no opportunity for effective competition for management services. Therefore, the Compact requires that the host state, subject to the approval of the Compact Board, ensures that fees charged by any regional management facility are reasonable.

Management v. Disposal. As do all the low-level waste compacts, the Rocky Mountain Compact concerns regional management issues as well as disposal.[5] The states took this approach very deliberately because the low-level waste disposal problem cannot be properly solved in isolation from the rest of the management system in which disposal occurs. The states recognized the close interrelationship of non-disposal management techniques, such as transportation and volume reduction to disposal, well-illustrated by the Beatty, Nevada site. Efforts by the State of Nevada to close the

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3. C.R.S. 24-60-2200 Article 7 A. (b), 1973
4. C.R.S. 24-60-2200 Article 3 D. (3), 1973
5. C.R.S. 24-60-2200 Article 1 A.; Article 3 A. and B.; Article 7 C. and D.; 1973

Beatty disposal facility have not been based primarily on safety concerns of the disposal operation itself but, rather, on unsafe shipments. Nevada's experience has clearly shown us that control over the disposal site is not in itself sufficient, that control should also extend to transportation safety.

Although the Compact addresses certain aspects of low-level waste management beyond disposal, it is totally compatible with the existing federal/state regulatory framework. The Compact requires approval of regional facilities for the management of low-level waste by the Compact Board. "Management" is defined to include the collection, consolidation, storage, treatment and incineration, as well as disposal, of low-level waste.[6] However, as with disposal facilities, the Compact Board's authority over other management facilities is limited to approval only for economic feasibility and need.[7]

It is imperative that a compact region has a clear picture of the low-level waste generated and disposal capacity required. This cannot be done if it is not known what other management facilities, such as incinerators or compactors, will be installed which will significantly affect the volume, type, and classification of low-level waste ultimately disposed. Thus the Compact Board's authority extends beyond burial sites to all low-level waste management facilities in order to ensure a rational regional system.

The Compact also requires all party states to adopt and enforce procedures requiring that low-level waste shipments conform to packaging and transportation requirements and regulations.[8] By this we do not seek to grant the region or its member states any additional authority over transportation or packaging nor to interfere with federal transportation and packaging laws or regulations. This provision is a commitment by the party states to adopt and enforce federal and state packaging and transportation requirements as provided by federal law, rather than an attempt by the Compact to challenge the preemptive authority of the federal government in this area.

Definition of Low-Level Waste. The Rocky Mountain Compact's definition of low-level waste does not duplicate word for word that of the Low-Level Waste Policy Act. However, the definition is compatible with the intent of the Low-Level Waste Policy Act. A satisfactory definition of low-level waste has proven to be elusive to both the federal and state governments. Whereas, defining low-level waste in terms of what it _is not_ is very troubling to the states and many non-bureaucrats, the Rocky Mountain Compact definition of low-level waste attempts to provide greater understanding of both what low-level waste is, and _is not_.[9]

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6. C.R.S. 24-60-2200 Article 2 H., 1973
7. C.R.S. 24-60-2200 Article 4. B., 1973
8. C.R.S. 24-60-2200 Article 3 F., 1973
9. C.R.S. 24-60-2200 Article 2 G., 1973

Although the definition of low-level waste in both the Low-Level Waste Policy Act and the Rocky Mountain Compact exclude high-level waste, the Rocky Mountain Compact provides a few examples of what high-level waste is, consistent with the Nuclear Regulatory Commission's (NRC) definition. Both exclude byproduct material as defined in Section 11e.(2) of the Atomic Energy Act of 1954, with the Compact adding the phrase "as amended on November 8, 1978," so that we are not trying to hit a moving target.[10]

Definition-Mining. The Rocky Mountain Compact's definition also specifies that "wastes from mining, milling, smelting, or similar processing of ores and mineral bearing material primarily for minerals other than radium" is not low-level waste.[11] This provision was not included in the Low-Level Waste Policy Act although it is understood that the exclusion of byproduct material as defined in Section 11e.(2) of the Atomic Energy Act has the same effect. The Compact negotiators were compelled to add this provision after the uranium mining industry raised concerns that, without such additional language, low-level waste could be interpreted to include uranium mill tailings. This in turn would require the disposal of all uranium mill tailings in regional low-level waste facilities, which was clearly not the intent of Congress or the states.

Definition-Federal Waste. The Rocky Mountain Compact excludes all waste generated by federal government defense and research and development activities.[12] The Low-Level Waste Policy Act specifically excludes "low-level radioactive waste produced by atomic energy defense activities of the Secretary [of Energy] or Federal research and development activities."[13] The states have viewed the Congressional intent of the Low-Level Waste Policy Act as vesting in the states the responsibility for providing for the disposal of non-defense, non-research and development, commercially generated low-level waste. After the Rocky Mountain Compacts was negotiated, the point was raised that Department of Defense low-level radioactive waste must be accepted at compact sites since such waste is not explicitly excluded under the Low-Level Waste Policy Act.

We believe that the intent of Congress on this matter is enunciated clearly in the December 13, 1980 colloquy which occured during the floor debate in the House of Representatives. Congressman Udall, the prime sponsor of the Low-Level Waste Policy Act stated:

> Compacts established under the act will not be applicable to low-level wastes produced by Federal activities. The Federal Government, not the States, is and should be responsible for the management and disposal of federally produced wastes.

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10. C.R.S. 24-60-2200 Article 2 G. (4), 1973
11. C.R.S. 24-60-2200 Article 2 G. (5), 1973
12. C.R.S. 24-60-2200 Article 2 G. (1), 1973
13. P.L 96-573 Sec. 3. (b) (42 USC 2021c.)

To this, Congressman Dingell added:

> Under the terms of this bill, each State becomes responsible for the disposal of all nondefense and all non-Federal research and development low-level radioactive waste generated with the State. . . .under section 3(a), any compact established under this act shall not provide for the disposal of defense generated waste. . . for the disposal of such waste remains a Federal responsibility.

As a result, the Rocky Mountain states determined that the Rocky Mountain Compact should not be responsible for defense low-level waste, whether generated by the Department of Energy or Department of Defense. Should the federal goverment require the compact sites to accept Department of Defense waste, a serious crisis would result.

Definition-Transuranics. The final variation between the Rocky Mountain Compact and the Low-Level Waste Policy Act to note is in the Compact's more specific exclusion of transuranic waste. The Rocky Mountain Compact excludes waste containing more than ten nanocuries of transuranic elements per gram of material.[14] The specificity of prescribing ten nanocuries as the upper limit for accepting low-level waste contaminated with transuranic elements was again a conscious decision by the negotiating states. The Low-Level Waste Policy Act excludes by reference transuranic waste as defined in section 11e.(2) of the Atomic Energy Act of 1954, under which the Nuclear Regulatory Commission is charged with promulgating the actual transuranic waste definition.[15] At the time the Low-Level Waste Policy Act was passed and the Rocky Mountain Compact was negotiated, transuranic waste was defined by the NRC as material containing more than ten nanocuries of transuranic elements per gram of material. However, the states were aware that the NRC was considering raising this limit to 100 nanocuries. The Compact negotiators were faced with a dilemma: either to specify a nanocurie limit in the Compact and thus assure a stable definition of low-level waste acceptable for disposal, or to incorporate by reference the federal definition and thus open the regional site to accepting whatever transuranic material the NRC defined as low-level waste — waste which the states never understood to be included. To illustrate the states' concern about a variable definition, just last week I learned that although the general limit on transuranic contamination of low-level waste is 100 nanocuries, NRC allows up to 20,000 nanocuries of Curium-242 in low-level waste.

The Rocky Mountain states were unwilling to adopt — and in fact at least one state was constitutionally prohibited from adopting — by reference a definition which is beyond the states' authority to control. As a result, the Compact specifies a ten nanocurie per gram maximum concentration for low-level waste.

As expected, the NRC has increased the allowable limit of transuranic elements in low-level waste to 100 nanocuries per gram, and raised this issue in their comments on the Compact.[16] It should be realized that the amount of waste which would fall between the ten and 100 nanocurie limits of the two definitions is extremely small. In addition, under the Rocky Mountain Compact as now written, the Compact Board and the state in which the site is located have the authority to permit the disposal of such waste at the regional facility.

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[14] C.R.S. 24-60-2200 Article 2 G. (3), 1973

[15] P.L. 96-573 Sec. 2.(2) (42 USC 2021b.)

The difference between the Rocky Mountain Compact's 10 nanocurie limit and the limit in the Low-Level Waste Policy Act which may be changed by NRC rule may seem academic, considering the small amount of commercial waste that falls in the 10 to 100 nanocurie range and the Compact's flexibility for accepting such waste. However, due to the openendedness of the low-level waste definition it is entirely possible that it could again be broadened in the future to include types of waste which a facility was not designed to accept and for which a compact region and host state had not anticipated responsibility.

Board Approval of Facilities. The Rocky Mountain Compact does not establish a large or broad regional regulatory authority. It follows the "weak board, strong state" model, with most existing federal/state low-level waste authority continuing to reside where it now does. The Compact creates a Board, composed of one representative from each member state.[17] Under the terms of the Compact, it will be unlawful for anyone to dispose of low-level waste within the region except at regional facilities approved by the Compact Board.[18] (There is an exemption for generators who, prior to January 1, 1982, had been disposing of only their own wastes on their own property.) A proposed facility can be authorized as a regional facility only by approval of the Board.[19] The Compact Board's authority however, is limited to considerations of economics and need.[20] The Board can approve a regional facility only if it determines that there will be sufficient demand to render the proposed facility economically feasible without endangering the economic viability of any other regional facility and only if the proposed facility will have sufficient capacity to serve the needs of the region for a reasonable period of time. All facility siting and licensing authority continues to reside with the host state or, in the case of a non-agreement state or a state which has not entered into a 274i agreement, with the NRC.[21]

Compact Surcharges. The Compact authorizes a state surcharge, with the amount subject to Board approval, to cover the costs to the host state of the facility's licensure and regulation, reserves for decommissioning and long-term care, and local

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16. 10CFR61.55
17. C.R.S. 24-60-2200 Article 6 B., 1973
18. C.R.S. 24-60-2200 Article 3 B.,and Article 7 A., 1973
19. C.R.S. 24-60-2200 Article 2 L., 1973
20. C.R.S. 24-60-2200 Article 4 B., 1973
21. C.R.S. 24-60-2200 Article 3 D., 1973

impact mitigation.[22] Colorado has further provided for local impact assistance by authorizing the county or municipality in which a regional facility is located to levy a maximum fee of two percent of the annual gross revenue received by the facility, less county taxes. Similarly, the Compact Board is authorized to levy a surcharge on waste received at any regional facility to support the activities of the Board.[23] These surcharges are intended to ensure that the waste generators pay the full cost of management and regulation, without burdening state or federal taxpayers.

Economics of Site Development and Operation. Two low-level waste disposal issues relating to compact development and implementation concern the economics of low-level waste disposal and the time requirements for disposal facility development. Economics has been of particular concern to the Rocky Mountain Compact region because of frequent warnings that the Rocky Mountain region simply does not generate sufficient volumes of waste to make a low-level waste disposal facility economically feasible. Although this same argument has concerned other regions, we have concluded that it is without merit. In 1981, the Rocky Mountain region generated approximately 35,000 cubic feet of low-level waste. With the addition of Arizona's nuclear power plant plus growth in other low-level waste-generating activities, we expect that volume to increase to over 70,000 cubic feet by 1985 and to nearly 150,000 cubic feet by the year 2000. (By comparison, Illinois generates almost 300,000 cubic feet and California over 200,000 cubic feet per year.) A contractor is now completing a study which concludes that a facility disposing of the Rocky Mountain region's relatively small volume of waste can do so profitably by charging disposal fees comparable to those currently levied by existing disposal facilities.

We have likewise concluded that the five-year development period frequently cited as necessary before a disposal facility can become operational can be reduced significantly. With the experience gained through the site exploration activities currently underway in Colorado, we have determined that without major impediments, the entire pre-operational activities can be completed in less than three years without reducing attention to health and safety or other public concerns. What it does require is a high level of communcation and coordination among all parties concerned, particularly the facility proponents and local, state, and federal authorities.

Siting a New Low-Level Waste Disposal Facility

When Colorado adopted the Rocky Mountain Compact into law, the State recognized its responsibility to develop a new regional low-level waste facility and so included implementing legislation which established a process for facility siting.[24] (Attachment A contains the low-level waste siting process adopted by the Colorado General

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[22] C.R.S. 24-60-2200 Article 5 B., 1973

[23] C.R.S. 24-60-2200 Article 5 A., 1973

[24] C.R.S. 24-60-2205, 2206, 2207; 1973

Assembly.) Under the Colorado Low-Level Radioactive Waste Act, Colorado counties are provided the initial opportunity to volunteer areas within their borders for a low-level waste site.[25] If no site has been recommended by a board of county commissioners by January 1, 1984, the Colorado Department of Health would conduct a statewide assessment and evaluation of potential areas deemed suitable for a low-level waste facility.[26] Following this assessment, private firms would be provided an opportunity to propose developing a site in any one of the potentially suitable areas.

In the event there is no low-level waste disposal facility proposed or approved by January 1, 1985, the Colorado Department of Health would develop an alternative plan for facility development and submit it to the Colorado General Assembly by January 1, 1986, for approval.[27] This provision was included to cover the eventuality of no private firm's being interested in establishing a disposal facility for the Rocky Mountain region. In that case, an alternative plan would be drawn up, providing for a state-owned and -operated facility. A state-owned facility will be developed only as a last resort. Based on current activities, development of such an alternative plan is not expected to be necessary.

The Colorado siting process also allows a private firm to propose other sites during this process. However, the Colorado Department of Health is prohibited by law from licensing any low-level waste disposal facility not located in an area identified as acceptable in the statewide assessment or recommended by a board of county commissioners, unless it is demonstrated that the proposed site is at least as technically suitable as either the state- or county-designated areas.

To the amazement of many, a county in Colorado has responded positively to the siting of a low-level waste disposal facility within its borders. While the Montrose Board of County Commissioners has not yet formally recommended a specific site for a low-level waste facility, it has reacted favorably to the Chem-Nuclear Systems, Inc. interest in siting such a facility near Naturita, Colorado, in the western end of Montrose County.

Chem-Nuclear Systems, Inc. was invited into Montrose County by the "West End Business Development Committee" which was seeking to attract industry into this economicallydepressed region. The West End of Montrose County lies in the uranium belt, supported by a traditional industry of uranium mining and milling. Having a population experienced with the uranium industry, and considering the current economic downturn in that industry and the consequent unemployment, the county is interested in hosting a low-level waste facility.

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[25] C.R.S. 24-60-2206, 1973

[26] C.R.S. 24-60-2207, 1973

[27] C.R.S. 24-60-2207 (e), 1973

Chem-Nuclear Systems, Inc. is in the process of completing a survey of other possible disposal sites, also in western Colorado. Although the Denver metropolitan area, where the majority of the State's low-level wste is generated, lies on the eastern side of the Rocky Mountains, Chem-Nuclear is focusing its efforts on developing a disposal site on the Western Slope of the mountains because it wishes to dispose not only of low-level waste, but also uranium mill tailings. Since mill tailings represent a much larger volume of waste, it makes sense to locate the disposal facility as near to this portion of the waste as possible.

It is expected that within a few months Chem-Nuclear will decide on which site it wishes to develop and will proceed with site investigation efforts. A low-level waste disposal facility must obtain county approval as well as a state radioactive materials license, and other minor state permits. Because of the large amount of federal land in western Colorado, it is also quite likely that the site may be on federal land. In that event, the company must purchase the land from the federal government and deed it over to state ownership. This will no doubt be interpreted as a major federal action, requiring an Environmental Impact Statement.

We expect to see continued progress in the coming months on development of a low-level waste disposal facility in Colorado to serve the needs of the Rocky Mountain Region. With the development of an interstate compact, its adoption by several states, the interest by a private firm in developing a facility to meet the region's needs, and the general receptivity of a community to hosting a new low-level waste disposal site, much progress has been made in a relatively short period of time. However, this progress can continue only under a Congressionally ratified Compact.

Need for Congressional Action

Rapid Congressional ratification of the low-level radioactive waste compacts is critical to the sucessful conclusion of this exemplary federal/state partnership. Considering the technical and legal complexities as well as the political explosiveness of this issue, several regions have moved with great speed in the compacting process. If Congress delays consideration of the compacts as they are submitted by the states, great disenchantment will result. Any discussion of extending the 1986 date for regional exclusivity at this time would be counterproductive. If the 1986 date does not remain a firm target, the momentum toward solving this problem will be reduced and some states may act less rapidly. In addition regions including the Rocky Mountains region will be hesitant to establish new disposal facilities if their exclusionary authority is uncertain. I am hopeful that states will be able to provide for accomodation of the 1986 exclusionary date without additional federal intervention. The infant compact regions have already initiated interregional discussions to ensure that no compact region actively pursuing a disposal facility will find itself left out in the cold in 1986.

I would also caution Congress in making changes to the compacts which would necessitate resubmission of the compacts to the state legislatures. The Rocky Mountain states believe most strongly that all regions should be allowed flexibility to define solutions for the low-level waste problem as it exists in each region of the country. While there is unquestionably the need for overall national compatibility, the states should not be straight-jacketed in their quest for solutions. The Low-Level Waste Policy Act represents an unusual opportunity for a true federal/state partnership in solving an important national problem. The Low-Level Waste Policy Act can be a new beginning in federal/state relations, one in which the Congress, in consultation with the states, establishes broad policy guidance and then allows the states to develop solutions which are responsive to their varying needs.

I hope that this Committee will expeditiously and favorably consider the low-level waste compacts which are expected to be before it in the next several months. Positive Congressional action will reinforce the need for all regions of the country to renew their efforts in implementing a responsible, equitable system for low-level waste management, without the need for a major new federal program.

I would like to close with a special word of thanks to the Department of Energy (DOE) and its prime contractor, EG&G Idaho, Inc., for the invaluable assistance they have provided the Rocky Mountain region. Their technical assistance has enabled state policy-makers to develop a clear understanding of the issues affecting low-level waste management, and to design a compact that addresses those issues and the unique institutional features of the Rocky Mountain states. The funding provided by the Department of Energy to develop and implement the Compact has been, and for the short term will continue to be, of critical importance to the success of the program. To us in the West who have more than once found ourselves in conflict with actions of the federal government, the DOE Low-Level Waste Management Branch has proven that cooperative federal-state relations are not only achievable, but also can be extremely fruitful.

PREPARED STATEMENT OF DAVID W. STEVENS

We appreciate the opportunity to appear and present testimony supporting the consent of the Congress for regional compacts dealing with low-level radioactive wastes. As a representative of a region with a compact which has been ratified by five states (Oregon, Idaho, Washington, Utah, Hawaii) through legislative action, and one (Montana) by Executive Order, we can attest to the strong cooperative efforts by the states in our region to forge an alliance which we feel fulfills both the spirit and the substance of the national Low-Level Policy Act of 1980. Montana has enabling legislation that has passed one House of its legislature. Alaska's legislation is scheduled for introduction within the next few days. If those measures are adopted, seven of the eight eligible states would have become parties to the Northwest Compact within two years of its initial introduction.

We are gratified by the response shown by the states in our region that feel strongly that a cooperative regional venture dealing with radioactive wastes is the proper approach in coming to terms with this national problem. Initial interest was demonstrated in Washington State in November, 1980, when our citizens, by a 75 percent approving vote, decided they favored severe restrictions on the importing of out-of-state waste for disposal at the Hanford site. The significant level of interest of our citizens in dealing with the uncontrolled importation of wastes from nearly every state in the country has continued unabated, even though the initiative that they approve in 1980 was later declared to be unconstitutional by the federal courts.

That initiative also recognized the validity of regional compacts, in that one of its provisions held that other restrictions would not apply if a state were part of an interstate compact. Fortified by that background and by the high interest on the part of Washington's Governor and Legislature, the compact was ratified in April, 1981, Idaho having approved the same compact a few days earlier. During that period of ratification, efforts in our region were reinforced by the then recent passage of the federal Low-Level Radioactive Waste Policy Act of 1980 (Public Law 96-573). It was most encouraging and helpful to have such a firm expression of federal policy support for the kind of efforts underway in the Northwest.

It was the intent of those involved in the negotiation effort, and, I am certain, of most of the legislators who have been involved in that process, that the compact deal with low-level radioactive wastes in conformance with federal laws and regulations. While the state of Washington and others nave had a significant experience with interstate compacts over the years, negotiating compacts regarding low-level radioactive wastes has been unique. In the case at hand, not just one but a series of compacts will cover the entire nation, will deal with the same issue, will have reasonable compatibility (if not uniformity), and will be constructed with enough authority to achieve the objective of better systemizing the disposal of wastes through a more equitable system of shared responsibility.

Mr. Chairman, as the result of our work in the Northwest in fashioning the country's first compact, we have provided the opportunity and the focus for considerable review and comment regarding whether or not the compact:

- is compatible with the federal act;

- is compatible with existing federal regulatory structures;

- interferes with or involves other areas not contemplated by the federal acts;
- provides an opportunity for dealing with unusual wastes or waste forms;
- provides a means for the region to work with other regions toward a unified national program which will encompass all facets of the issue.

We feel that, on all counts, the Northwest Compact meets the test that underlies Congressional intent in entrusting states with and in encouraging them to take the leadership in dealing with this significant national issue. The driving force in our progress to date has been to carry out the charge in the Low-Level Waste Policy Act and to do that responsibly and as quickly as possible. We are well on our way in the Northwest, and we hope that the Congress will, during this session, give early consideration and approval not only to our particular compact but to others which I am certain will shortly be before it.

I would like to dwell briefly on a few of the questions that have been raised concerning the Northwest Compact in order to dispel whatever hesitation or reservation there might be regarding either the language or the intent of its provisions. We have confidence that those questions are resolvable within the context of the compact and that no delay in the consent process is needed in order to deal with them.

Date of Exclusivity

As you have noted from the text of our compact, the desire of the northwest states is to be able to exclude out-of-region wastes at the earliest possible time. Given the strong desire of our citizens for an exclusionary date of July 1, 1983, the compact reflects a date that was reasonable at the time of its ratification by the initial party states. It is clear that, in order for that date to have been met, almost immediate action by the Congress would have been necessary. It would have also been essential to have temporary sites or storage capability available or arranged. That date, July 1, 1983, also assumed that the negotiations that were being initiated in other regions would be carried to fruition more quickly than has actually occurred.

What appeared to be feasible two years ago, at the time of ratification, would be difficult to achieve now. As host state, we feel that reliance on January 1, 1986, as the initial date upon which a region could exercise exclusivity would be compatible with the regional efforts now underway. Any delay in the implementation date of January 1, 1986, would not be appropriate, and any shifting of that date to a later time would be strongly resisted.

Definition of Low-Level Waste

Basically, there is no incompatibility between the definitions of low-level waste contained in the Northwest Compact and the federal act. There is, however, an obvious difference. The federal definition states what low-level radioactive waste is not. It is not high-level waste, transuranic waste (i.e., waste with less radioactivity than would qualify it for disposal elsewhere), spent nuclear fuel, or uranium mill tailings. The Northwest compact, on the other hand, attempts to describe what low-level radioactive waste is, i.e., radioactive materials that exceed applicable federal or state standards for unrestricted release, and transuranic materials in concentrations less than ten nanocuries per gram.

Given the difference in approach in those definitions, it could be anticipated that some potential inconsistency would arise. In the construction of the Northwest Compact, it was felt that there was merit in stating the definition of low-level waste in specific terms rather than in accepting the unusual and unclear method of simply defining it in terms of what low-level waste is not. From a practical standpoint, those differences in definition may result in unacceptable conflict, for they encompass uranium mill tailings, "unsuitable waste," transuranic wastes, waste whose radioactivity is below federal and state standards, or some federally-generated wastes. If we look at the technical issues only, the intent of the definitions appears to be the same. In general, there is only a minor amount of waste involved where conflicts could arise between the federal and the Northwest Compact definitions. In order that those differences, as they exist, do not cloud the achievement of our common objective of dealing with low-level waste disposal on a regional, more systemized basis, we could support Congressional attention to a definition specifically describing low-level wastes, which could thereby establish uniformity with all compacts and therefore guarantee the consistency that some feel is now missing from proposed regional compact language.

"Management" versus "Disposal"

Some concerns have been expressed over compacts that go beyond the authority prescribed in the federal act and that propose, in fact, to deal with management rather than disposal. We do not think that there is a conflict between "management" and "disposal." Those who have been working on compact development have focused on the disposal of wastes. There are, however, related impacts, because of considerations such as the life of the site, the economics of treatment, volume reduction, or other aspects of the disposal process, broadly construed. Treated wastes may become more or less hazardous, thus changing their suitability to a particular disposal site. Because waste form changes through treatment, the various compact committees can and must be concerned about both the hazard to and the economic impact on their disposal sites. Waste classification, on-site storage, and other aspects of the waste cycle after generation do have a direct impact upon the operation of a regional site.

Unfortunately, some concerns have been expressed that the "management" of wastes implies assessment and regulation of health and safety issues currently exercised by federal agencies. We do not and have not questioned existing federal authority and jurisdiction over various health and safety issues. But we do feel that the inter-relationships that exist between disposal and treatment relate to economics, to waste flows, and to disposal-volume impacts, including the life of the site, none of which is in conflict with existing law and regulation. The focus is disposal, and the characterization of the term "management" relates to those factors that deal directly or indirectly with ultimate disposal. Our efforts to "manage" the problem do not include going beyond, or making basic changes to, the in-place regulatory system.

Transportation of Low-Level Radioactive Waste

The Northwest Compact requires that the party states authorize containers for low-level radioactive waste and that only authorized containers be used. While the compact drafters intended that existing U.S. Department of Transportation requirements be followed, the language is not precise. We maintain that nothing in existing regulation would preclude the compact states from dealing with necessary container authorization for site disposal purposes, as contrasted with containerization for transportation. But conflict between the federal system and the compact system could occur if the host state were not a "U.S. NRC Agreement State."

Specifically, the compact implies that the host state would have regulatory (i.e., health and safety) authority over the low-level waste facility. Only Agreement States have such authority. As long as the host state is an Agreement State, compatibility with existing federal requirements, particularly with regard to transportation, does not appear to be a significant problem.

In short, on this issue, we do not anticipate conflict; nor is conflict with the existing federal regulatory system at all desirable. Compact development is being accomplished within the existing regulatory framework. Any proposed changes in existing federal authority over the health and safety issues concerning low-level radioactive wastes should be made directly in the authorizing legislation, not in a regional compact. In other words, the intent of the Northwest Compact requirement that we are considering is not that states should set their own standards in relation to transportation, but instead that party states should enforce existing federal standards.

Interim Regulations

The Northwest Compact has drawn particular attention to the period between Congressional consent and the date on which the Compact may exercise exclusivity. While preliminary drafts of proposed regulations have been drawn and circulated, no action has been taken to start the formal rule-making process. Governor Spellman has indicated that, because of the existing regulatory program and indemnification system, which are working well, implementation of that part of the compact should await the Congressional consent process. Such an approach minimizes what some states have indicated is at least a statutory, and perhaps a constitutional, problem. It should also be noted that that compact provision would be relevant only until the party states can exercise Congressionally-derived authority to exclude out-of-region generated wastes. Assurances of adequate ongoing inspection and indemnification and other evidence of dealing with the needs of the host state by substantially complying with the intent of this provision would tend to minimize any need for its rapid implementation.

Impact of the 1986 Exclusion Date

The party states of the Northwest Compact are ready to initiate the full range of regional responsibility outlined in the Low-Level Waste Policy Act. At the same time, we understand the complexity of the issue and the amount of work that needs to be accomplished in other regions before we have in place a system of regional compacts covering the whole nation. It is likely that not all regions will have operating sites by January 1, 1986, and we feel strongly that that date, established by federal law, should continue to be the point of departure for the exercise of exclusionary authority. Therefore, any delay or change in that date would be inconsistent with the overall objective established by the Congress.

Moreover, we feel that it is important to provide assurances that there will be no sharp disruption of the existing system as long as regions are making good-faith efforts to develop regional capacity to deal with low-level radioactive wastes. In other words, the abrupt implementation of exclusionary authority by one or two regional compacts, without regard for the impact of such action on other regions, would not be appropriate.

In short, our party states pledge their support for the efforts now underway and for the development of alternatives that will enable generators to deal with their wastes. We think that it is necessary for regions without operating sites to begin now to develop a plan for interim storage, use of other sites within a particular region on a temporary basis, or, where necessary, for a temporary agreement with a compact that is already operating a disposal site. Our region continues to be willing to help those regions where measurable progress has been made.

It is entirely possible to have compacts adopted by all regional areas by 1986, to have such compacts consented to by the Congress, to have a host state selected, and to have actual site work, which could include the submittal of a license application, begun. Insofar as we can determine, there is no circumstance that would prevent the good-faith efforts now underway throughout the country from achieving near-operational status in several regions.

To summarize our position, the realization of our common national objective regarding the disposal of low-level radioactive nuclear waste is served by cooperative action. Such is the desire of the state of Washington, the Northwest Regional Compact's host state, and of our party states.

Mr. Chairman, these appear to be the principal issues before us. We think that all are resolvable without adversely effecting the consent process.

Thank you.

THE REGIONAL LLW COMPACTING PROCESS: THE MIDWEST EXPERIENCE: WILLIAM C. TAYLOR, PROFESSOR OF CIVIL ENGINEERING, MICHIGAN STATE UNIVERSITY, EAST LANSING, MI

ABSTRACT

Representatives from sixteen states met periodically over an 18-month period to negotiate the Midwest Low-Level Radioactive Waste Compact. The Compact was approved by a majority of the representatives on September 1, 1982. This Compact has subsequently been enacted into law in the State of Michigan and is under consideration by the legislatures of the remaining states in the region. This paper describes the important issues which were addressed in these negotiations, indicating those issues which were resolved in the compact and those left for the host state, the Compact Commission or for the national low-level waste community to resolve.

INTRODUCTION

The purpose of this paper is to discuss the experience of the Midwest Low-Level Radioactive Waste Compact Committee as our compact was negotiated. There were several issues identified during these negotiations—some of which were resolved and are incorporated in the compact itself, and some of which were left unresolved pending the formation of a Commission. I will concentrate my comments on these issues, as many of the same issues are common to other regions in the country. There are also differences between regions, depending on whether a site presently exists in the region or a volunteer steps forward during the negotiations. However, several issues will be common to all compacts.

Before discussing these specific issues, there are two procedural items which became relatively important in our negotiations, and thus deserve some discussion. The first of these is the need for "credentialed" negotiators, and the second is the need for a sufficient level of economic analysis to demonstrate the need for a regional approach to radioactive waste disposal. Our failure to recognize the importance of the first of these issues resulted in the loss of approximately one year in our negotiating effort.

The Midwest Compact negotiation process was initiated in January 1980, nearly a year prior to the passage of Public Act 96. Even at that time, we recognized that a coordinated effort among states in our region of the country would be beneficial in assuring the availability of a disposal site, and promised the added benefit of lowered costs due to the economies of scale and the reduction in transportation costs. We had become acutely aware of the potential for the loss of access to available sites when the Governors of South Carolina, Washington and Nevada closed their facilities temporarily in the summer of 1979.

As a result of this awareness, Governor Milliken wrote to each of the Governors in the region from West Virginia to Wisconsin asking that they send a representative to discuss the desirability of forming an interstate compact for the disposal of low-level radioactive waste. Representatives from the Department of Energy, the Nuclear Regulatory Commission, the Department of Transportation, and the U.S. Geological Survey were present and discussed Federal programs that could be used to assist states in implementing such a compact.

As a result of this meeting, representatives from Ohio, Wisconsin, Indiana, and Illinois joined with Michigan, and over the next six months developed and agreed upon the basic concepts of an interstate compact. (The State of Minnesota subsequently joined our negotiations.) A final draft concept paper was prepared which was to be used as the basis for negotiating the compact language. That concept paper was very similar to the concepts ultimately contained in the compact which was passed in the Midwest.

It became obvious that while the representatives of the various states were acting in good faith in agreeing on concepts to be included in a compact, there had not been adequate discussion of these concepts within their own state government circles. The fact that the concepts became final in August 1980 (an election year) probably contributed to the reluctance of any of the states to take the lead in proposing that a site be developed in the Midwest. It had now been over a year since the existing sites were closed, and it was appealing to assume (at least publicly) that the existing sites would remain open and that while the cost might increase, access to a disposal facility would be available.

Our efforts also lost momentum because I was on sabbatical leave from September through December 1980, and was out of the country. When I returned, Congress had passed Public Act 96 and those of us who had been involved in the compact negotiations agreed that the effort to establish a Midwest Regional Compact should be accelerated. With the cooperation of the State Planning Council, the process was reopened when Governor Milliken once again wrote to each of the Governors in the Midwest (the Midwest had now expanded to include the states of North Dakota, South Dakota, Iowa, Kansas, Nebraska, Missouri and Kentucky in addition to the six states originally involved in the negotiations). In this letter, we specifically asked that the Governors send a "credentialed" representative with authorization to negotiate, make decisions, and if necessary vote on specific language of a compact on behalf of the Governor. Our letter further stated that if the Governor of the invited state was not willing to send a delegate with this authority, then we would prefer that they not participate in our negotiations. Thirteen of the fourteen states responded by sending a delegate to our negotiating session. The one exception was the State of West Virginia. Several months later, the States of Virginia, Maryland, and Delaware asked and were granted permission to joint our compact group.

The value of having designated representatives as negotiators was demonstrated in the disposition of this compact. Following a final vote of the Commission in September 1982, the compact has been formally introduced into the legislature in most of the compact states, and is at least under review by formal legislative committees in the remaining states. The requirement that the Governors of all states becomemore personally involved, along with continual reminders from the National Governor's Association, the State Planning Council, and others that the availability of existing sites was only temporary, helped assure executive office support in the state legislatures.

The second procedural item which became relatively important early in the negotiation process was the need for documentation of the benefits to be derived from joining a regional compact. The primary benefit—that of an assured facility—could only be assured by adopting language guaranteeing access to all party states. There was also a desire on the part of the representatives to document, at least in general terms, the potential economic benefit of a regional facility. Thus, an analysis of the disposal cost for each individual state and various combinations of states was prepared. These economic scenarios were based on existing cost information and were modeled by EG&G Idaho. The cost per cubic foot for disposal on an individual state basis ranged from a low of about $5.00 per cubic foot to over $1,000 per cubic foot depending on the volume generated by the state. (These are costs of disposal, not prices to be charged to the user. They do not include transportation, packaging, return on investment, or profit.) In comparison, the cost per cubic foot for the region as a whole was approximately $3.00 per cubic foot and for five central states in the region about $3.50 per cubic foot. Thus, even for a state with waste volumes as large as Illinois, the benefit of a regional facility would be approximately a 40 percent cost reduction and for the smaller states the reduction was several hundred percent.

In addition, a transportation cost model was developed and estimates made of the cost of transporting the waste from each state to the existing facilities, each state to a central location within that state, and from each state to a central location within the region. These cost estimates were also made available to the representatives to be used in demonstrating the potential savings possible through a coordinated regional management and disposal program when compared to an individual state disposal facility. The transportation cost differentials are relatively small for a single state versus the regional approach, but significant for either of these options when compared with existing transportation costs to South Carolina and/or Washington.

ISSUES

In addition to these procedural matters, a number of significant issues arose during the negotiations, including: (1) Are all states to be considered as potential host states regardless of the volume of waste generated?; (2) What is the most appropriate sequence of events involving the designation of host states, selection of an operator, enactment of legislation adopting the compact and site selection?; (3) What is the most appropriate authority of the Commission vis-a-vis the party states and the host state; (4) What criteria and/or procedures should be used in selecting the host states; (5) What procedures should be used in determining the number and type of facilities to be developed in the region; and (6) Questions of congressional intent regarding the scope of the compact authority. Many of these issues are inter-related, and it was not possible to resolve any single issue without resolving several others. For example, a procedure for selecting a disposal site could not be developed until the role of the Commission was defined.

There was one combination of such issues that could not be resolved to the satisfaction of all of negotiators, and this failure to reach a resolution resulted in the division of the proposed compact. The issue was—who should select a site, and what sequence of events should lead up to this decision? The division was based on a disagreement on the relative strength of the Commission and that of the host state. One philosophy was that the compact Commission should select a contractor who would survey the region and make recommmendation as to the best site. Following the recommendations from this contractor, the Commission would then adopt (or modify) the recommendation. This action would designate the host state and select the site simultaneously. Then, depending on whether the site was in an agreement state or a non-agreement state, the license application would be made to the state or to the NRC by the contractor selected for the operation.

The advantage of this approach is that the state legislators in the host state would not be required to become directly involved in site selection, which is admittedly a difficult task. Instead, the Commission, as opposed to the state legislature, would adopt a plan designating the state and the site. The state legislature would not be required to vote on the acceptability of a site or to select from among various communities from within their state to host the repository.

Another potential advantage is that the Commission would not have to adopt criteria for selecting a host state, as site criteria rather than host state criteria would be used by the consultant in preparing their recommendation. A third advantage of this approach is that the contractor would theoretically select the site with the best potential for success, especially if the contractor were also to be the operator of the site. The contractor would be required to fund the site selection process and the license application and would want to be sure the recommended site was both technically and politically feasible.

The disadvantage of this approach is that the state legislature (and through it the citizens) would not be sufficiently involved in the decision-making process. To many of the negotiators, this lack of control over the process would not be accepted to the legislators and the compact would never be adopted. In the approach contained in the Midwest Compact, the Commission's role is limited to the adoption of a management plan, and it is not involved in the site selection process. The Commission is required to first adopt a management plan specifying the number of facilities and the states which are to serve as the host states for these facilities. The states so designated then select the site and apply for a license.

The advantage of this approach is that the site selection process will be conducted according to the mandates of the host state. The state legislation will establish the procedures and criteria for site selection in their state. This also provides a stronger host state role in deciding what goes into the license application and site regulations.

This approach should also reduce the time and cost of the site selection process since this process would now be limited to one or two states as opposed to the entire region. A site selection process covering all 16 states should be more costly than a comparable study limited to only those states designated as host states.

We recognized that other compacts give preferential treatment to states that generate low volumes, with large generators required to host the first several sites, and at some later date the low-volume states might serve as hosts. We rejected the concept of a separate classification of states, but adopted language that requires the consideration of transportation costs in developing a management plan. Therefore, states that generate larger volumes have a somewhat higher probability of being selected because transportation costs would be less if the facility were located in their states. However, this may not help a state like Indiana, which is a low-volume generator located in the center of all the regional high-volume generators. States like South Dakota and North Dakota have a reasonably low probability of being designated because they are both low-volume generators and on the geographic fringe of the region.

Another specific issue with which we dealt was the development of a mechanism to protect states from being designated as the host state for political or economic reasons rather than technical ones. There was some concern that a majority of the Commissioners could join together to select another state as the host state based on political affiliation or some other extraneous factor.

Two specific provisions were adopted in the Midwest Compact in response to this issue. The first was the incorporation of language which established general guidelines for the selection of a host state, and a provision that public hearings be held both on the criteria adopted by the Commission in refining their guidelines and on the application of the criteria to the region. Thus, the full process will be conducted in a public forum, and the probability of non-relevant criteria being used in the selection process is reduced. This two-step approach of first selecting host states and then selecting sites should result in less time being consumed before a facility is available. There is no guarantee that the host state will move as expeditiously as a contractor might, but at least the number of sites to be looked at and the alternatives to be considered should be less, and hopefully, therefore, time would be reduced as well.

The division in our region seems to be basically between states where citizen groups are most visible and most influential in the legislature versus those states where citizen groups have been less active. Many of us in states where the citizen groups have a long history of involvement with the legislature felt that it would be impossible to go to our state legislature with a compact that says, "Join the Compact, and someone from the outside will determine whether you will be a host state, and if you are, where the site will be". We believe it would be easier to go to the legislature and say, "Join the Compact. You may be designated a host state, but if you are, you will have the responsibility and the opportunity to select the most appropriate site in your state".

ISSUES THAT WERE RESOLVED

All the issues we faced were not irreconcilable, and several issues were resolved in the negotiation process. One such question was whether a state like South Dakota, which generates less than one cubic meter a year, should run an equal risk with the State of Illinois that one or the other might accept the other's waste. To Illinois, taking one more cubic meter of waste from South Dakota would be insignificant, but to South Dakota adding Illinois' waste to their one meter makes a lot of difference.

Specifically, the compact requires that: "The Commission shall adopt a regional management plan designed to ensure the safe and efficient management of waste generated within the region. In adopting a regional waste management plan the Commission shall:

a. Adopt procedures for determining, consistent with considerations for public health and safety, the type and number of regional facilities which are presently necessary and which are projected to be necessary to manage waste generated within the region;

b. Develop and consider policies promoting source reduction of waste generated within the region;

c. Develop and adopt procedures and criteria for identifying a party state as a host state for a regional facility. In developing these criteria, the Commission shall consider all the following:

1. The health, safety, and welfare of the citizens of the party states.
2. The existence of regional facilities within each party state.
3. The minimization of waste transportation.
4. The volumes and types of wastes generated within each party state.
5. The environmental, economic, and ecological impacts on the air, land and water resources of the party states.

d. Conduct such hearings, and obtain such reports, studies, evidence and testimony required by its approval procedures to identifying a party state as a host state for a needed regional facility;

e. Prepare a draft management plan, including procedures, criteria and host states, including procedures, criteria and host states, including alternatives, which shall be made available in a convenient form to the public for comment. Upon the request of a party state, the Commission shall conduct a public hearing in that state prior to the adoption of the management plan. The management plan shall include the Commission's response to public and party state comment."

The second provision is that any state designated as a host state may withdraw from the Compact if they believe the process was not applied fairly. The penalty for withdrawing is loss of membership in the Compact. Thus, while there is no direct cost for seceding, the state is then required to either develop their own site or petition another compact group for admission.

ISSUES FOR THE COMMISSION

While the issues discussed above were resolved in the compact negotiation process, there are several other issues which remain to be resolved by the Commission or the host state. One of the most critical is the determination of the number and type of facilities which will be included in the management plan. While there must be at least one disposal facility, the management plan could also include multiple facilities, back-up facilities, incinerators and/or volume reduction stations. All of these facility types were discussed by the negotiators and the decision as to the number and type of facilities was left to the Commission. One reason for this is that the economics of multiple facilities or different types of facilities is dependent on the total volume of waste. Since more than half of the states eligible for membership in the Midwest Compact are also eligible for membership in other compacts, it is difficult to predict the ultimate size (and therefore volume) of our region.

The preliminary economic analysis conducted for our region indicated that the siting of incinerators in the region would not drastically alter the economics of waste disposal if the region contains all sixteen states. That is, the reduction in transportation costs would probably offset the cost of constructing and siting an incinerator. Because of the reduced volume at the disposal facility, the unit cost at this facility would probably increase, but the total cost for the region would be comparable to that for a region without the incinerator. This might result in a different distribution of costs across various states, depending on the exact location of the incinerator and whether the generating state was closer to the incinerator or to the disposal facility.

One of the factors considered in this decision will be the desirability of sharing responsibility for implementation of the management plan. It may well be easier for a given state to accept the designation of a host state for the disposal facility if they are assured that some other state in the region will share the responsibility by hosting an incinerator or a volume-reduction site. Thus, the question may be as much one of political acceptability as of economics. This is particularly true if our preliminary economic analysis holds true, and the cost to the generators is comparable for a management plan with or without additional facilities.

While we had some discussion regarding the concept included in the Northwest Compact—that the disposal of hazardous waste be considered in the determination of host states for low-level radioactive waste, this was rejected. The basic reason for this rejection is the difficulty in determining the volume of such waste, and the uncertainty that transporting these large volumes is feasible or desirable. While we are reasonably confident that low-level radioactive waste can be transported within the region without introducing a significant hazard to our citizens, it is not so clear that transporting hazardous waste throughout the region does not pose a significant hazard. In addition, it is not clear that a regional compact has the authority to mandate the disposal location for hazardous chemicals.

A second unresolved issue is the exact procedures and criteria for selecting host states. As I outlined previously, there is language in the compact to assure that the criteria are identified prior to the adoption of a management plan, and that these criteria are subject to public scrutiny and comments by party states. However, the specific process by which these criteria are developed was left to the Commission. One alternative is to utilize a contractor (probably a firm currently involved in waste disposal) to specify what they would look for in selecting a site for licensing and operation. A second alternative is to utilize NRC Regulations 10CFR61 and successively eliminate areas within the region, until a sufficiently small number of areas remain as candidates for the site. This choice was left to the Commission to resolve in adopting their bylaws and operating practices.

A third issue discussed but not fully resolved is that of liability of the Commission and the host state. The concensus in our discussions was that assigning the full responsibility for siting to the host state also placed the liability with that state. The host state could levy user fees to provide insurance against this liability, but any liability resulting from the site selection and licensing process would not be borne by other states or the Commission. It is not clear that any liability traced back to the management plan or the host state designation could be avoided by the Commission and the party states to the Compact. This is one of the questions which must be addressed by the Commission in establishing both their bylaws and their operating budget as it relates to insurance and other liability protection.

A final issue of concern for the Commission is whether the protection for individual states provided in the Compact will create other problems. There is always the danger that states will adopt the Compact with the intent to withdraw if they are selected as the designated host state. If this occurs, as a minimum the region has lost time (perhaps as much as one to two years), and, at worst, the whole Compact could collapse. I don't know of any process that the Commission can use to avoid this threat. Perhaps our best assurance that this does not occur lies with Congress and the compacts which include existing facilities. If it is made clear that a state designated as a host state that does not fulfill that responsibility (without just cause), will be denied access to existing facilities, this may be a sufficient threat to dissuade a state from withdrawing from the Compact. Hopefully, this problem will not occur as the prologue to the Compact to be adopted by the State Legislators and signed by the Governor states that this is a goodfaith effort on the part of all party states to resolve the regional problem to the mutual benefit of all states.

HOST STATE ISSUES

In addition to the issues left to be resolved by the Commission, there were also issues left to be resolved by the host state. The first of these is the authority to impose regulations and fees. Our compact states: "to the extent permitted by federal and state law, a host state shall regulate and license any facility within its borders and insure the extended care of that facility"; and "a host state may establish a fee system for any regional facility within its borders. The fee system shall be reasonable and equitable. This fee system shall provide the host state with sufficient revenue to cover any costs, including but not limited to, the planning, siting, licensure, operation, decommissioning, extended care and long term liability, associated with such facilities. This fee system may also include reasonable revenue beyond the cost incurred for the host state, subject to approval by the Commission." Issues left to be resolved are the extent to which host state laws will affect the regulations adopted by the host state, and what constitutes "reasonable" revenue beyond costs incurred by the host state. The intent of our negotiators was to provide both protection and incentive for a state to either volunteer or at least willingly accept the host state designation. By stating that regulations can reflect state laws, the host state is assured that they have some flexibility in regulating the shipment and disposal of low-level radioactive waste.

Other sections of the compact provide that "each party state has the right to have all waste generated within its borders managed at regional facilities . . ."; and "all party states have an equal right of access to any facility made available to the region by an agreement entered into by the Commission". These sections are intended to protect the party states from discriminatory action by the host state legislature. Thus, while the host state has authority to enact legislation to protect their citizens, such legislation cannot be utilized to effectively prohibit the shipment of waste from other party states to the regional facility. The definition of what legislation is "necessary" and what is "prohibitive" will probably remain an issue for some time.

A second issue that the host state will have to resolve relates to the siting of a facility. Our Compact states that each host state is responsible for determining possible facility locations within its borders. The only restrictions imposed by the compact are that "The selection of a facility site shall not conflict with applicable federal and host state laws, regulations and rules not inconsistent with this compact and shall be based on factors including, but not limited to, geological, environmental, and economic viability of possible facility locations". Since our states are contiguous, it would be possible for a host state to locate a facility near the border of an adjoining state. One of the issues that probably needs resolution is whether the adjoining state has any voice in the siting process. This issue may be particularly troublesome if the management plan includes incineration. Depending on the direction of the prevailing winds, the potential impact of an incinerator may be more pronounced on an adjoining state than in the host state. Thus, some provision probably needs to be made for input from affected states in any citing decision.

NATIONAL ISSUES

Finally, there are some issues which need to be resolved at the national level. These include the authority of commissions prior to Congressional ratification of the compacts, the availability of facilities in other regions for emergencies, and the timing of the development of regional facilities.

The first and third of these issues are significantly related. It is reasonably clear that regions without an existing facility or a volunteer host state will not be able to develop and license a facility by 1986. This means that even if the party states enact the legislation this year, and all party states act in good faith in the expeditious development of a facility, there will probably be at least a two year time period when existing facilities are authorized to close (if their compacts have been ratified) prior to the availability of disposal capability within other regions. I believe it is important that the intent of states and regions with existing facilities be resolved prior to ratification of their compacts. It is not likely that representatives from Michigan and other Midwest states could support ratification of the Northwest, Southeast, and Rocky Mountain Compacts unless some provision is made for the disposal of our waste during this interim period.

There must be further discussion among the various regions on solutions to this issue. We recognize that those compacts which have been formed need Congressional ratification for their compacts to be valid. The ratification process will also answer questions which we all have regarding the scope of these compacts. We are all interested in determining what degree of management will be allowed within the scope of a regional compact, and whether regulations proposed by states will be found in conflict with applicable state and federal laws. These questions can probably only be answered when Congress ratifies one or more of the regional compacts. However, as much as we would like to see these questions answered, we still cannot support ratification without a resolution of the question of access to facilities beyond 1986.

I believe it will be possible to reach an agreement on this issue following more discussion among the regional representatives. Options include the utilization of federal facilities for an interim period or a guarantee that existing facilities will provide access for those states which are making "satisfactory" progress toward development of their own regional facility. This guarantee might be in the form of loaned capacity—to be repaid when new facilities are open, or, if capacity is not a critical problem at the existing facilities, it might be continued operation with a surcharge added to waste from outside their region. Any such guarantee would have to be accompanied by a definition of "satisfactory" progress. This is essential both for the protection of the existing facilities, and to maintain reasonable progress in the regions developing new facilities. If the perception exists that the facilities in Washington, Nevada or South Carolina will remain open indefinitely, then I fear that progress in many of the other regions might be slowed. A firm time schedule for ratification of the compact, selection of the host state and submittal of the license application might be included in any agreement between regions with existing facilities and regions developing new facilities. These check points should be fairly tight, to assure that continued progress is made in regions like ours.

There is an additional issue which must be addressed at the national level, as it affects all regions. This is the authority of compact commissions prior to Congressional ratification. We are concerned, for example, that the adoption of a management plan specifying a host state for facilities in our region will be challenged by the citizens of that state. As Public Act 96 reads, it is not clear that the Commission has legal status and thus can take any action prior to Congressional ratification. If not, then presumably commission action prior to Congressional ratification could be successfully challenged in court.

A final issue to be resolved by the various regions are agreements regarding the transhipment of waste from one region to another. This issue has two components: (1) What provisions will be made for shipments as a function of the waste form?; and (2) Can the regions reach an agreement on the use of sites in other regions for emergencies? The first of these issues probably will only be resolved over time, as specific waste forms are identified which need treatment different than that available in each region. However, the second issue will have to be addressed early in the process of developing facility plans by each region.

The Midwest Compact has a provision for the designation of a state to host a disposal facility to be used if the primary facility is closed due to an emergency. It would seem more desirable if our region could reach an agreement with another region to permit our generators to ship waste to their facility in case of an emergency closure, and in return we would offer the same guarantee to their region. If this cannot be agreed to, then each region will probably require its own back-up facility, and I doubt that this would be cost effective.

CONCLUSION

I believe the Midwest Compact is a workable document that will result in the development of a sound management program for low-level radioactive waste in our region of the country. For this to happen, continued good-faith efforts on the part of each of the states involved will be required as the issues left unresolved are addressed. The Compact provides for a great deal of authority for the host state, with the Commission playing primarily a management role. This role includes determination of the number and types of facilities as well as agreements on shipments into or outside the regional boundaries. If the Commission members appointed by the governors show the same degree of responsibility and cooperation as the delegated negotiators, the Midwest should successfully meet its obligation to accept responsibility for low-level waste generated in this region.

Senator **SIMPSON**. The next panel has two members representing the National Conference of States Legislatures, the Honorable Joseph Strohl of the State of Wisconsin, a State senator; and the Honorable Al Williams, State senator from the State of Washington.

And I remember hearing your testimony in Seattle, Mr. Williams, I recall. It is good to have you both here. And we do have this time limitation, and I will ask you to proceed, Senator Strohl, please.

STATEMENTS OF HON. JOSEPH STROHL, A STATE SENATOR FROM THE STATE OF WISCONSIN, CHAIRMAN, SENATE ENERGY AND ENVIRONMENTAL RESOURCES COMMITTEE, AND MEMBER, NATIONAL CONFERENCE OF STATE LEGISLATURES' ENERGY COMMITTEE; AND HON. AL WILLIAMS, A STATE SENATOR FROM THE STATE OF WASHINGTON, CHAIRMAN, SENATE ENERGY COMMITTEE, AND MEMBER, NATIONAL CONFERENCE OF STATE LEGISLATURES' ENERGY COMMITTEE

Senator **Strohl**. Thank you, Senator Simpson. I appreciate the opportunity to speak here today. I have submitted my testimony in advance, so I am sure you have copies up there.

Let me abbreviate it and try to emphasize several points. As you know, I am a State senator from the State of Wisconsin. I am chairman of our energy and environmental resources committee and have been involved in the nuclear waste issue, both the high level and the low level.

We have been invited here, as I understand it, to give you the legislative perspective on the process of determining how to dispose of low level nuclear waste. I think a lot of people are under the assumption that things are going fairly smoothly in the Midwest; that State legislatures are taking up the compact; they are ratifying it; and it appears things are going fairly well.

I think the reason it appears to be going so well is that during the entire compacting process the State of Illinois made it fairly clear that they probably would offer to be a host. They are the largest generator in the Midwest. They assumed that they had that responsibility. Unfortunately, those kind of assumptions were being made by someone who I think probably was not in a position to make those kind of commitments for the State.

And I, as a legislator, sat in on a number of Midwest compacting sessions. It was pretty clear that as long as someone was going to volunteer to be a host, there would be no problem with all of us joining in since someone else was going to resolve our problem.

I suspect that as we move down the road and it becomes clearer to the public and the legislature in Illinois, that we are going to see some serious consideration being given by Illinois to possibly backing out. And I think if that happens, we in the Midwest will have some serious problems trying to figure out which State will become the host.

The compact does not say how we will select the host State; it says the commission will decide how to select the host State. We have also heard that South Dakota may offer to be a host State. I suspect that we are a long way from South Dakota making that decision. I suspect that as the public in South Dakota becomes more aware of that, that there may be serious reservations there also.

I have talked to some of my colleagues in legislatures in other Midwestern States. The States that are going ahead and proceeding to adopt a compact are under the assumption that by getting in now, it keeps their options open. If they were ever selected to be the host, they could always back out.

You may see the compact as moving smoothly, but that does not mean that everything is necessarily going well. We in Wisconsin are seriously looking at, as are some of the larger States—Texas and California—of going it alone. As you certainly are aware of the legislation, Senator, it provides two different directions for the States to go. It is very clear that States themselves are responsible for disposal of low-level waste, or they can join a compact and share the responsibility in the region.

In looking at the history of this legislation, it appears that it was assumed that smaller States that generate a small amount, probably would conclude that it would not be economically feasible to go it alone. And so they would have no choice for economic reasons but to join a compact.

But we in Wisconsin, before we decide to join this compact, wanted to take a look at the economics involved to going it alone. We had some of our staff in various State agencies look at this option and try to determine what the cost would be for Wisconsin citizens and Wisconsin rate payers. In Wisconsin most of our waste comes from the nuclear electric industry. So most of the cost would be borne by the ratepayers.

In comparing the State going it alone option with that of Wisconsin joining the Midwest, the impact on ratepayers would be fairly insignificant. The cost per household we figure would be about a penny more per month by going it alone. The cost per kilowatt-hour of electricity would be in the neighborhood of two-thousandths of a cent per kilowatt-hour, a very insignificant amount.

As a result of those numbers, it looks to be feasible for us in Wisconsin, even though we are a very small generator—only 3 percent of the Midwest total—that economically we could probably afford to go it alone. In addition to that, it seems to be the public attitude that we will be responsible for our own waste; we will solve this problem ourselves. We do not necessarily want to enter into a regional compact.

Going back and looking at Illinois, if Illinois does host the first State, that might solve our problem for a short period of time. The compact says the region site will be open for probably 20 years. In 20 years we will be looking for a second site. So we in Wisconsin maybe could take the easy route and go into the compact, but 20 years from now be faced with hosting the second site. We anticipate in 20 years our nuclear generating facilities will no longer be in operation and as a result we will be generating only a very small amount of nuclear waste.

We thus have to face the question, do we want to 20 years from now entertain the possibility of hosting a regional facility when we no longer will be generating great volumes of nuclear waste outselves?

There is of course the problem of the right of a State to exclude waste from outside its boundaries, an issue that has been brought up several times. I would urge that the Senator and his colleagues seriously look at that to make it possible for States to go it alone and to be able to resolve the problem on their own.

Again, I think the act makes it clear that we as a State have two options, but there is that legal barrier that may make it difficult for us to go it alone.

Thank you, Senator.

Senator SIMPSON. Thank you very much. I was just curious, there, are you indicating that when the plants in Wisconsin reach obsolescence or the time comes when they are not safely operable, that Wisconsin then will drop the nuclear option and go to something else? Is that what you are saying?

Senator STROHL. That is absolutely correct, Senator. We currently have generators in operation at three different sites. One will close down within the next 5 years; the owners of the facility agree with that. Our two other major facilities are expected to also, their licenses will run out in the year 2005 and 2008.

It is expected that they will be decommissioned at that point. Our public service commission is moving with the assumption they will be closed down at that date and be ready for decommissioning at that date. We have no plans to construct any more nuclear facilities in Wisconsin, and I suspect we will not be constructing any more nuclear facilities.

Senator SIMPSON. And the PSC is fully supportive of that?

Senator STROHL. They imposed a moratorium on the construction of any more nuclear powerplants.

Senator SIMPSON. And the utilities themselves feel that is something they want to go to?

Senator STROHL. They are questioning whether or not those facilities will be shut down by 2008. Their licenses expire then. They assumed the facilities will be good for 30 years, and that 30 years will be up then.

Senator SIMPSON. Very interesting. Well, nice to have you appearing again, Sentor Williams.

Senator WILLIAMS. Senator Simpson, pleased to be before you again. I hope your trip to Seattle was enjoyable.

Senator SIMPSON. It was very productive. I enjoyed that hearing.

Senator WILLIAMS. My comments probably will be somewhat similar to what I gave you at that particular meeting. I, like Senator Strohl, hold a similar position in our State legislature. I am chairman of our Senate Energy Committee and also a member of the NCSL Energy Committee.

We have, I think, as legislative members, some similar concerns about the compacts. We do not necessarily think everything is going swimmingly these days; there are some problems we see. The compact in the State of Washington, when it did pass, passed by a vote of 27 to 21 in our Senate, which is considerably less than a consensus. We did have some concern about that document. We still do have concern.

My testimony, I am just abbreviating comments from the written testimony that I have given you, and I will not go into the specific details as to what we think needs to be changed in our compact.

However, I have introduced amendatory language in our State legislature to the compact for consideration. I think our consideration of that is probably going to not be hurried. I think we would like to work in conjunction with what is happening here at Congress in looking at compacts generally.

We are not rushing off passing new compact language and finding that there are still additional changes that Congress might feel appropriate

We hope to be working together on that. Also, since the compact passed in our State in 1981, the volume coming into the Hanford site has approximately doubled, and I think the concern of people in our State still holds, the political concern which led to the initiative and public concern about the amount of waste coming into the State of Washington.

In spite of these concerns with the compact, we also believe that our legislature does support the regional idea of compacts and the passage of those compacts as soon as possible. We hold to the 1986 date. We would not like to see that date changed.

We are concerned, though, that the congressional delegations of large waste generating States, that the exclusionary deadline—1986—as that date approaches, that a number of States will be concerned that they will not have a place to dispose of their wastes and that concern may hold up action in Congress on the passage of compacts, the approval of those.

Also, we feel that there is dissimilar language in the various compacts which do not necessarily have a uniform underlying policy as determined by Congress yet in which they fit. And so, we would urge that Congress spend some time in developing model compact language, and particularly using the expertise of the States, both at the administrative as well as the legislative level of Government.

Also, policy differences may be so great between the executive and the legislative branches that compact ratification may be stymied. Congress should direct the Department of Energy to more fully involve State legislatures in informational meetings and in specific compact reviews plus, perhaps, some assistance to the State legislatures in dealing with the compacts.

Finally, we again think that Congress should move swiftly, give its timely consent to a Northwest low-level waste compact. Washington State has negotiated in good faith with its neighbors, based on congressional sanction of the compact process as a means of reducing the burden on the handful of States that currently accept waste from across the country.

Congress should stand by that commitment and ratify our Northwest compact and thereby send a signal to those States still negotiating that they will not be let off the hook. If the compact process breaks down, Washington will have to find a way on its own to limit incoming low-level waste as South Carolina and Nevada have done.

It is hard to avoid the conclusion that the cummulative effect of such limits would be to create a crisis for generators of commercial low-level waste. There is clearly a connection in the minds of the citizens of my State between the high-level waste program recently enacted by Congress and there is a concern on our part that if the low level-waste situation is not handled appropriately, it may undermine the high level waste program.

Finally, though there appears to be a great deal of work yet to be accomplished in perfecting the compacts, I assure you that our legislature is ready to make appropriate changes to see that those compacts are passed.

Senator SIMPSON. Thank you very much. I now have a conflict and must leave. And let us have a 5-minute recess and Senator Thurmond will return very shortly. And I appreciate your testimony, and I know that Senator Thurmond had some questions. And I thank you for your participation.

[Brief recess.]

The CHAIRMAN. Mr. Strohl, I believe you are a State senator from Wisconsin and Mr. Williams, you are a State senator from Washington. It is a pleasure to have you here. I believe you have already made your statements.

Now, I have a few questions here I would like to propound to you.

Senator Strohl, what is your prognosis regarding State ratification of the various compacts?

Senator STROHL. Are you referring, Senator, to what is the prognosis of the State of Wisconsin getting into one of the compacts?

The CHAIRMAN. Well, I mean the States in general in your region.

Senator STROHL. At the current time, Senator, most of our State legislators and legislatures are proceeding with adopting the Midwest compact. The State of Michigan has already adopted it. It has passed a single house in a number of States and is being taken up by most of them.

As I stated in my earlier comments, Senator, it is fairly easy for us in Wisconsin to decide to enter the compact because when the compact was being negotiated it was assumed that the State of Illinois would offer to be the host. And I anticipate that down the road as the Illinois Legislature and the public in Illinois become more familiar with that commitment, that Illinois may have second thoughts about acting as a host. As a result of that, we will be left without a specified process in the Midwest on how to select a host site and State.

Legislatures seem to be entering compacts under the assumption that they can always back out, and once you enter that keeps your options open.

The CHAIRMAN. What problems do you foresee in the process of ratification by State legislatures? And when do you expect your compact to be ready for introduction to Congress?

Senator STROHL. Senator, as I pointed out, one State has already ratified. It was anticipated yesterday that two other legislatures were going to give final approval to the compact. That of course would bring the number to three, and then it could have been sent on to your committee, Mr. Chairman, for consideration.

So I anticipate that you will soon have from the Midwest a compact ready for your consideration. I anticipate when you receive it, though, there will still be a number of States that have not taken it up and acted upon it. And it appears most will be doing that in the next few months. We in Wisconsin in the next few months will be making the decision as to whether or not we want to go it alone or enter into a regional compact.

The CHAIRMAN. Have many of the State legislators been active participants in the compact negotiation process?

Senator **Strohl**. Is that addressed to me, Senator?

The **Chairman**. Either one of you.

Senator **Williams**. Well, Mr. Chairman, in the State of Washington, our legislature was really not very much involved in the development of the compact. It was primarily an executive branch development, and our input was generally during the legislative hearings on it. And as I indicated in my testimony earlier, there was a certain amount of concern about that compact, the Northwest compact. And as I indicated earlier, our State senate only approved it by a vote of 27 to 21.

We do have additional concerns about the compact, and as I indicated earlier, I have introduced legislation making some changes in that compact. I think that is a problem that we have had in that there was a certain amount of political pressure, public pressure for a resolution of the waste issue in the Northwest, primarily because we had an initiative that passed rather handily.

And even though it was declared unconstitutional, there was a public concern there, and I think the compact that we have was a hurried response to that political problem. I think the compact basically itself is good. However, there are aspects of it that we think need to be perfected.

The **Chairman**. Senator Williams, regarding your bill which amends the Northwest compact, I am wondering if you are concerned that passage of such legislation might significantly delay the congressional consent process?

Senator **Williams**. That, as I indicated earlier, is a bill that I have introduced. We hope that will not delay. We are hoping that that will expedite because I am assuming that Congress will itself have some suggestions as to what the final compact language should be.

We are anticipating what some of those changes might be and have no intention of proceeding to ratify our compact until we have had some interchange with Congress.

The **Chairman**. Now, if we should amend any compacts here in the Senate, would that not require all the State legislatures of the States concerned to reenact them?

Senator **Williams**. I believe that is true, and I fully expect that would happen. I think the process that we are involved in is not a simple process of a compact being forwarded to Congress, having consent to it, and then have it in fact put in place. I suspect that there is going to be some give and take and back and forth movement in terms of final language of those compacts, particularly since each region is not necessarily looking at compacts from an overall national perspective.

The **Chairman**. Now, if Washington State amends the compact, would not all the other State legislatures or other States within your region have to amend that compact too?

Senator **Williams**. Yes, they would.

The **Chairman**. Before it comes to the Congress? How long would that take?

Senator **Williams**. Well, I think that would take place within one series of sessions of the various legislatures. I think the Southwest region from where you come has already gone through that process to a certain extent.

The **Chairman**. We are in the Southeast, I believe.

Senator **Williams**. Southeast, excuse me.

The **Chairman**. I am just wondering if the legislators of these various States have given consideration to the compacts along with the Governors' representatives. It seems that it would be helpful to have legislators and people appointed by the Governor to work together because I can see where the legislators, some of them, might feel there should be some changes.

I am just wondering if it would not be a good idea for each State to have a representative of the Governor and a representative of the State legislature working on these compacts.

Senator **Williams**. Senator, I think that is one of the suggestions that we would appreciate very much. And I think that is what we are pointing toward.

Senator **Strohl**. Senator, if I can add to that. Your earlier question asked about the involvement of the State legislators in the compact process. Generally, I would say that in the Midwest there was little knowledge or involvement by State legislators. Again this is a result of most people assuming that a host would volunteer, and thus there really was no need for a lot of involvement. Some of us—legislators in Wisconsin and several other Midwestern States—did play a part in the process. We took the compact before it was actually approved by the negotiators, brought it back to our State legislature and held a number of public hearings. And then we made recommendations to the State negotiator who was a representative of the Governor.

He worked to get those into the Midwestern compact. So in a couple instances there are examples of where State legislators did have a role in the process, but I think generally it is fair to say that there was not much involvement.

The **Chairman**. I think that is something worth being considered because both have to act, the executive and the legislative branch.

I want to thank you gentlemen for your appearance here today and for your testimony.

Senator **Williams**. Senator, thank you.

Senator **Strohl**. Thank you.

[Statements supplied follow:]

Prepared Statement of Joe Strohl

I appreciate the opportunity to testify before this Committee on the issue of Low Level Radioactive Waste.

My name is Joseph Strohl. I am a State Senator in the Wisconsin Legislature. I currently serve as chairman of the Senate Energy and Environmental Resources Committee. In addition, I am a member of the National Conference of State Legislatures (NCSL) Energy Committee.

I was elected to the State Legislature in 1978. Since that time I have been actively involved in a number of nuclear energy issues including the disposal of both high and low-level radioactive waste. I was recently elected chairman of the Wisconsin Radioactive Waste Review Board. This state entity has been created to represent Wisconsin in negotiations with the United States Department of Energy (DOE) in its search for a repository for disposing of high-level radioactive waste. The board is composed of both public and private citizens and will monitor all activities by DOE and other federal agencies in the search for a high-level site.

The citizens of Wisconsin are very skeptical of federal efforts to solve the nuclear waste disposal problems. This skepticism was created by DOE in its rush to find a disposal site in one of the upper Midwestern states of Michigan, Minnesota, or Wisconsin.

The high level issue has received much attention and thus it has been somewhat difficult to get the attention of either the general public or the policy makers on the low-level disposal issue.

During the past two years numerous meetings have been held in the Midwest to discuss low-level waste and the creation of a compact to deal with it.

You would expect that such meetings or negotiations would have been held between top policy makers of the various states. Further, you would think these meetings would have attracted the attention of both the public (which is greatly concerned about nuclear issues) and the press (which never shies away from nuclear energy issues).

Unfortunately, none of this has happened in the Midwest. Nearly all of the negotiating sessions were held in a small room at an airport hotel near Chicago. The meetings were open to the public and the press but since little or no

ADVANCE NOTICE WAS GIVEN, NEITHER THE PUBLIC NOR THE PRESS ATTENDED. OTHER THAN THE NEGOTIATORS, THOSE IN ATTENDANCE WERE USUALLY NUCLEAR INDUSTRY REPRESENTATIVES. FEW STATE LEGISLATORS ATTENDED EITHER. MOST STATES NEVER HAD LEGISLATIVE REPRESENTATION.

AND WHO DID THE NEGOTIATING? NOT THE STATE'S TOP POLICY MAKERS. MOST STATES WERE REPRESENTATED BY NUCLEAR TECHNICIANS. BY THAT I MEAN SCIENCE ADVISORS TO GOVERNORS, PUBLIC HEALTH OFFICIALS OR ENGINEERS OF STATE REGULATORY AGENCIES. ALL NEGOTIATORS WERE SINCERE INDIVIDUALS AND I'M CERTAIN DID THE BEST THEY COULD. HOWEVER THE PROBLEM OF NUCLEAR WASTE DISPOSAL IS AS MUCH A POLITICAL ISSUE AS IT IS A TECHNICAL ONE, AND THUS THE ENTIRE PROCESS MUST INVOLVE BOTH THE GENERAL PUBLIC AND ELECTED OFFICIALS AS WELL AS THE TECHNICIANS.

WHERE DOES THAT LEAVE US IN THE MIDWEST? THE COMPACT HAS BEEN APPROVED BY THE NEGOTIATORS AND IS CURRENTLY BEFORE MOST STATE LEGISLATURES. ONLY ONE LEGISLATURE HAS ACTUALLY APPROVED IT -- MICHIGAN. THEY APPROVED IT DURING THE WANING HOURS OF THEIR 1982 SESSION. WE ALL KNOW HOW WELL LEGISLATORS, BOTH STATE AND FEDERAL, KNOW THE FULL REMIFICATIONS OF ALL ISSUES VOTED UPON IN THE LAST HECTIC HOURS OF A SESSION.

MOST MIDWEST NEGOTIATORS WORKED UNDER THE ASSUMPTION THAT ILLINOIS WOULD VOLUNTEER TO HOST THE FIRST SITE. THEIR NEGOTIATOR, A NUCLEAR TECHNICIAN, STATED THAT SINCE ILLINOIS WAS THE LARGEST GENERATOR IN THE MIDWEST (40%), IT MADE SENSE FOR THEM TO VOLUNTEER TO HAVE A SITE. FURTHER IT MADE GOOD ECONOMIC SENSE TO MAKE IT A REGIONAL SITE SINCE IT IS ASSUMED THAT THE PER VOLUME COST DECREASES SIGNIFICANTLY AS VOLUME INCREASES.

WELL, WHAT HAPPENED IN ILLINOIS? THEIR NEGOTIATOR HAS GONE BACK TO ARGONNE NATIONAL LABORATORY, HAVING LEFT THE LEGISLATURES WITH THE IMPRESSION THAT ILLINOIS WOULD BE THE LIKELY HOST STATE. MEANWHILE, ILLINOIS IS STILL TRYING TO FIGURE OUT WHAT TO DO WITH THE ABOANDONED SHEFFIELD LOW-LEVEL SITE. IN ADDITION, THE ECONOMICS OF A REGIONAL SITE MAY NOT BE AS ADVANTAGEOUS AS FIRST THOUGHT.

SOME MIDWEST STATES ARE NOW PROCEEDING UNDER THE ASSUMPTION THAT SOUTH DAKOTA MIGHT OFFER TO HOST A REGIONAL SITE. A PUBLIC DEBATE IS TAKING PLACE THERE OVER THE ISSUE OF PERMITTING URANIUM MINING. SOME ARE SUGGESTING THAT IF

THAT OCCURS THE AREA MINED MIGHT BE USED FOR A LOW-LEVEL DISPOSAL SITE. A KEY SOUTH DAKOTA LEGISLATOR WHO SUPPORTS BOTH MINING URANIUM AND SITING A DISPOSAL SITE THERE TOLD ME THAT WHEN ANSWERING ENVIRONMENTAL CONCERNS ABOUT GROUNDWATER CONTAMINATION FROM URANIUM MINING, IT WAS SAFER TO GET THE URANIUM OUT OF THE GROUND. I DOUBT THAT THAT KIND OF REASONING WILL CONVINCE THE PUBLIC THAT BOTH MINING AND DISPOSING CAN BE DONE SAFELY. IT ALSO APPEARS THAT THE SOUTH DAKOTA GOVERNOR ALSO OPPOSES A REGIONAL DISPOSAL SITE IN HIS STATE.

LEGISLATURES IN ANOTHER LARGE MIDWESTERN STATE ARE PROCEEDING WITH ADOPTING THE COMPACT BECAUSE THEY WANT TO KEEP THAT OPTION OPEN AND "COULD ALWAYS WITHDRAW IF THE STATE WERE EVENTUALLY SELECTED TO HOST A SITE."

AS FEDERAL POLICY MAKERS WITH A CONCERN FOR RESOLVING THIS IMPORTANT ISSUE, I HOPE THAT YOU ARE NOT PROCEEDING UNDER THE ASSUMPTION THAT WE IN THE MIDWEST SEEM TO BE RESOLVING IT FOR YOU. I HOPE MY COMMENTS ON ILLINOIS AND SOUTH DAKOTA LEAVE YOU WITH THE SKEPTICISM I HAVE ABOUT EITHER OF THOSE STATES EVER VOLUNTEERING TO HOST A REGIONAL SITE.

I HAVE NOT YET SPOKEN ABOUT WHAT COURSE WE IN WISCONSIN MIGHT TAKE. BEFORE I DO, LET ME GIVE YOU A LITTLE BACKGROUND. WISCONSIN PRESENTLY HAS FOUR COMMERCIAL NUCLEAR REACTORS IN OPERATION AT THREE SITES. THESE PLANTS GENERATE NEARLY 30% OF THE ELECTRICITY CONSUMED IN OUR STATE. THIS MAKES US MORE RELIANT ON NUCLEAR ENERGY THAN ALL OTHER STATES EXCEPT FOR ILLINOIS. WE THUS HAVE A GREAT INTEREST IN THE DISPOSAL ISSUE.

DESPITE OUR HEAVY RELIANCE ON NUCLEAR ENERGY WE ONLY PRODUCE ABOUT 3% OF THE MIDWEST'S WASTE. EIGHTY PERCENT OF THAT WASTE COMES FROM OUR COMMERCIAL REACTORS AND 20% FROM MEDICAL FACILITIES. WE GENERATE VIRTUALLY NO INDUSTRIAL RADIOACTIVE WASTE. WISCONSIN'S FOUR COMMERICAL REACTORS WILL BE CLOSED AND DECOMMISSIONED BY THE YEAR 2008. IN ADDITION THE VOLUME OF OUR MEDICAL WASTE FOR LAND BURIAL IS EXPECTED TO BE REDUCED DUE TO NEW TECHNIQUES OF VOLUME REDUCTION AND OTHER DISPOSAL METHODS.

THERE ARE NO NUCLEAR REACTORS UNDER CONSTRUCTION IN WISCONSIN NOR ARE ANY PLANNED. AS A MATTER OF FACT, OUR STATE REGULATORY COMMISSION RECENTLY DECLARED THAT WE DON'T NEED ANY NEW NUCLEAR OF FOSSIL FUEL PLANTS CONSTRUCTED IN THE NEXT 20 YEARS.

WHAT THIS MEANS FOR WISCONSIN IS THAT WE ARE SLOWLY LOOKING AT A POST-

NUCLEAR ERA; NO NEW PLANTS AND EXISTING ONES DECOMMISSIONED. WE ARE THUS ASKING OURSELVES IF WE WANT TO ENTER A COMPACT EVEN IF WE ARE ASSURED THAT THE FIRST SITE WILL BE ELSEWHERE. IT IS EXPECTED THAT THE FIRST REGIONAL SITE WILL BE OPEN FOR 20 YEARS. AT THE END OF THAT TIME, A SECOND ONE WOULD OPEN, PROBABLY IN ANOTHER STATE. IF WE JOINED A COMPACT WE COULD END UP HOSTING THE SECOND SITE AT A TIME IN OUR HISTORY WHEN WE ARE NO LONGER GENERATING MUCH WASTE OF OUR OWN.

AS YOU KNOW, THE LOW-LEVEL RADIOACTIVE WASTE POLICY ACT OF 1980 PERMITS EACH STATE TO EITHER "GO IT ALONE" OR JOIN A COMPACT. WHEN WE BEGAN THE COMPACTING PROCESS WE ASSUMED THAT IT WOULD BE ECONOMICALLY PROHIBITIVE FOR ANY STATE, ESPECIALLY A SMALL PRODUCER LIKE WISCONSIN, TO GO IT ALONE. WE IN WISCONSIN HAVE THUS BEEN PROCEEDING UNDER THE ASSUMPTION THAT WE WOULD PROBABLY JOIN A COMPACT.

HOWEVER, BEFORE MAKING THAT COMMITMENT, WE FELT IT WAS NECESSARY TO DETERMINE THE ECONOMICS OF THE GOING IT ALONE OPTION. THE GOVERNOR AND THE LEGISLATURE DIRECTED A SPECIAL COMMITTEE TO REVIEW THE COST TO GENERATORS AND COMSUMERS OF VARIOUS ALTERNATIVES FOR DISPOSAL OF WISCONSIN'S LOW-LEVEL WASTE. THE COMMITTEE, IN A REPORT DATED DECEMBER 1982, CONCLUDED THAT "THE ECONOMIC IMPACTS TO GENERATORS AND CONSUMERS ARE NOT SIGNIFICANTLY DIFFERENT AMONG THE ALTERNATIVES CONSIDERED." THEY STUDIED ENTERING THE MULTI-STATE MIDWEST COMPACT, FORMING A COMPACT WITH ANOTHER SINGLE STATE OR GOING IT ALONE.

SINCE MOST OF OUR WASTE IS GENERATED BY THE ELECTRIC UTILITY INDUSTRY, MOST OF THE DISPOSAL COSTS WILL BE BORNE BY UTILITY CUSTOMERS. THE REPORT STATES "THE ELECTRIC RATE IMPACT WHICH MIGHT BE FELT AS A RESULT OF CHOOSING THE HIGHEST COST OPTION, THE WISCONSIN-ONLY SITE, IS SLIGHT. THE DIFFERENTIAL OF $0.002/KWH WOULD INCREASE THE TYPICAL ELECTRICITY BILL BY ABOUT 1CENT A MONTH." THE AVERAGE COST OF ELECTRICITY IN WISCONSIN IS ABOUT 6CENT/KWH.

AS A RESULT OF THESE NUMBERS AND THE FACT THAT WE WILL BE DONE GENERATING MOST OF OUR WASTE BY 2008, AND THE GENERAL PUBLIC ATTITUDE THAT WE SHOULD BE RESPONSIBLE FOR ONLY OUR OWN WASTE, IT IS MY BELIEF THAT WISCONSIN SHOULD NOT JOIN A COMPACT BUT INSTEAD SHOULD DEVELOP OUR OWN SITE. MY POSITION IS SHARED BY OTHERS.

I THINK THAT AS MORE STATES ANALYZE THE ECONOMICS OF GOING IT ALONE, MORE

WILL SERIOUSLY CONSIDER THAT OPTION. IF WISCONSIN'S NUMBERS LOOK THAT GOOD, I WONDER WHAT A SIMILAR STUDY WOULD SHOW FOR A MAJOR GENERATING STATE LIKE ILLINOIS? I DOUBT THAT ILLINOIS WOULD WANT TO HOST A REGIONAL SITE IF THERE WERE LITTLE OR NO ECONOMIC ADVANTAGE FOR THEIR RATEPAYERS TO DO SO.

IF WE OR OTHERS GO IT ALONE, THERE ARE HOWEVER SEVERAL ISSUES THAT NEED ADDRESSING. HOW DO WE HANDLE THE INSITUTIONAL PROBLEMS OF LICENSING, REGULATING AND OPERATING A SITE? I THINK THESE CAN BE OVERCOME BUT MAY REQUIRE THE HELP AND DIRECTION OF CONGRESS. IN ADDITION, THE FEDERAL DISTRICT COURT DECISION STRIKING DOWN A WASHINGTON STATE LAW PROHIBITING THE IMPORTATION OF WASTE GENERATED OUTSIDE ITS BOUNDARIES ALSO POSES A SERIOUS PROBLEM THAT MUST BE OVERCOME. UNLESS CONGRESS OR A FEDERAL APPEALS COURT REVERSES THE DECISION, STATES WILL BE UNABLE TO EXCLUDE WASTE FROM OUTSIDE ITS BORDERS. CERTAINLY NO STATE WOULD SERIOUSLY UNDERTAKE "GOING IT ALONE" IF IT COULD NOT EXCLUDE WASTE GENERATED BY OTHERS. I WANT TO EMPHASIZE THAT THIS IS A MAJOR OBSTACLE THAT MUST BE ADDRESSED.

IN CONCLUSION, I AGAIN WANT TO THANK THIS COMMITTEE FOR GIVING ME THIS OPPORTUNITY TO ADDRESS THIS IMPORTANT ISSUE. I HOPE MY COMMENTS ARE HELPFUL IN UNDERSTANDING WHAT I BELIEVE HAS BEEN HAPPENING IN THE MIDWEST AND WHY THE FUTURE IN WISCONSIN IS UNCERTAIN. THANK YOU.

PREPARED STATEMENT OF AL WILLIAMS

I. DEVELOPMENT OF THE NW COMPACT

THE WASHINGTON STATE LEGISLATURE, IN SPITE OF PUBLIC PRESSURE, FAILED IN 1980 TO PASS A BILL REQUIRING A BAN ON RADIOACTIVE WASTE IMPORTATION IN THE STATE OF WASHINGTON BY JULY 1, 1981. MEDICAL WASTE AND WASTE FROM STATES PARTY TO AN INTERSTATE COMPACT WERE EXCEPTED. THIS FAILURE PROMPTED THE SUPPORTERS OF THE BILL TO SEEK RELIEF THROUGH THE INITIATIVE PROCESS. INITIATIVE 383 WAS PASSED BY THE VOTERS IN NOVEMBER OF 1980 BY A MORE THAN 70 PERCENT MARGIN. IT, LIKE THE LEGISLATIVE BILL REQUIRED A BAN ON ALL RADIOACTIVE WASTE INTO THE STATE, EXCEPT FOR MEDICAL WASTE AND RADIOACTIVE WASTE FROM STATES PARTY TO AN INTERSTATE COMPACT. FEDERAL COURTS SUBSEQUENTLY DECLARED THE INITIATIVE UNCONSTITUTIONAL. THE EXISTING COMPACT LANGUAGE WAS INTRODUCED BY EXECUTIVE REQUEST IN THE 1981 WASHINGTON STATE LEGISLATURE. QUICK PASSAGE OF THE COMPACT WAS URGED BY THE WASHINGTON EXECUTIVE BRANCH DUE TO PASSAGE OF AN IDENTICAL INSTRUMENT EARLIER IN IDAHO. CONSEQUENTLY, PASSAGE IN THE WASHINGTON STATE LEGISLATURE WAS RUSHED WITH LITTLE CONSIDERATION GIVEN TO FEDERAL INPUT OR DISSENTING OPINIONS. THE COMPACT PASSED THE STATE SENATE BY A VOTE OF 27 TO 21, CONSIDERABLY LESS THAN A CONSENSUS. THE WASHINGTON LEGISLATION DIFFERED FROM THAT PASSED BY IDAHO BY REQUIRING SENATE CONFIRMATION OF THE GUBERNATORIAL DESIGNEE TO THE REGIONAL LOW-LEVEL RADIOACTIVE WASTE COMPACT COMMITTEE. THE GOVERNOR VETOED THIS PROVISION.

II. AN IMPERFECT DOCUMENT

HASTY RESPONSE TO STRONG POLITICAL PRESSURE FROM THE PUBLIC HAS LED TO THE CREATION OF A RATHER IMPERFECT DOCUMENT. SOME OF THE DEFECTS ARE AS FOLLOWS:

1. THE EXCLUSIONARY DATE, JULY 1, 1983 FOR OUT-OF-REGION WASTE IMPORTATION IS IMPRACTICAL.
2. COMPACT DEFINITIONS AND PROCEDURAL REQUIREMENTS ARE INCONSISTENT WITH FEDERAL REQUIREMENTS.
3. THE REGIONAL COMPACT COMMITTEE'S ROLE IS ILL-DEFINED WITH REGARD TO ITS REGULATORY DUTIES AND POWERS.
4. CONTROL OVER REGIONAL WASTE DECISIONS RESTS ALMOST EXCLUSIVELY IN THE GOVERNOR'S HANDS THROUGH HIS DESIGNEE TO THE REGIONAL COMPACT COMMITTEE.

As a consequence of these major Compact defects, an amendatory Compact version was introduced in the 1983 legislative session. Since the Compact passed in early 1981, the volume of waste coming into the Hanford site has approximately doubled. This volume continues to rise. A Senate bill which is very likely to pass would limit the low level wastes coming into the Hanford site.

III. Concerns

In spite of legislative concern with the NW Compact, I believe our legislature fully supports the idea of regional disposal as soon as possible through the compact process. My personel concern, however, is that certain circumstances will cause serious delays in other regions such as:

1. Concern by congressional delegations of large waste generating states that exclusionary deadlines will take effect before they have agreement on where the waste from their state will be disposed.
2. Dissimilar language in various compacts without a reference to a uniform congressional policy may frustrate early consent. I believe Congress should develop model compact language utilizing the states expertise to advantage.
3. Policy differences may be so great between the executive and legislative branches that compact ratification may be stymied. Congress should direct the Department of Energy to more fully involve State Legislators in informational meetings and in region specific compact reviews.

IV. Conclusion

Congress should move swiftly to give its timely consent to a Northwest Low-Level Waste Compact. Washington State has negotiated in good faith with its neighbors, based upon Congressional sanction of the compact process as a means of reducing the burden on the handful of states that currenly accept waste from across the country. The Congress should stand by that commitment and ratify the Northwest Compact and thereby send a signal to those states still negotiating that they will not be let "off the hook".

If the compact process breaks down, Washington will have to find a way, on its own, to limit incoming low-level waste, as South Carolina and Nevada have done. It is hard to avoid the conclusion that the cumulative effect of such

LIMITS WOULD BE TO CREATE A CRISIS FOR GENERATORS OF COMMERCIAL LOW-LEVEL WASTES.

THERE IS CLEARLY A CONNECTION IN THE MINDS OF THE CITIZENS OF MY STATE BETWEEN THE HIGH AND LOW-LEVEL WASTE PROGRAM RECENTLY ENACTED BY CONGRESS WILL SURELY BE UNDERMINED. THAT IS NOT A PROSPECT ANY OF US COULD BE HAPPY ABOUT, BUT IT IS CLEARLY AN INEVITABLE RESULT IF THE COMPACTS AND THEIR EXCLUSIONARY PROVISIONS ARE NOT RATIFIED BY CONGRESS.

FINALLY, THOUGH THERE APPEARS TO BE A GREAT DEAL OF WORK YET TO BE ACCOMPLISHED IN PERFECTING THE COMPACTS, I ASSURE YOU THAT THE LEGISLATURE IS READY TO MAKE APPROPRIATE CHANGES TO GET THE COMPACT PASSED.

The CHAIRMAN. Now, we have a panel of Federal agency representatives. Would you come as I call your name and start at this end: Franklin E. Coffman, Director, Office of Terminal Waste Disposal and Remedial Action, Department of Energy, if you would have a seat right on the end, Mr. Coffman; G. Wayne Kerr, Office of State Programs, Nuclear Regulatory Commission; next, Leon D. Santman, Director, Materials Transportation Bureau, Department of Transportation; Lt. Col. Peter S. Daley, USAF, BSC, Director of Environmental Policy, Department of Defense; Dr. Robertson Augustine, Radiation Safety Officer, National Institutes of Health.

We are very pleased to have all you distinguished gentlemen here. And we would be glad to hear from you at this time. We will put your full statements in the record, but if you will confine your statements to not over 5 minutes.

STATEMENTS OF FRANKLIN E. COFFMAN, DIRECTOR, OFFICE OF TERMINAL WASTE DISPOSAL AND REMEDIAL ACTION, U.S. DEPARTMENT OF ENERGY; G. WAYNE KERR, OFFICE OF STATE PROGRAMS, U.S. NUCLEAR REGULATORY COMMISSION; LEON D. SANTMAN, DIRECTOR, MATERIALS TRANSPORTATION BUREAU, U.S. DEPARTMENT OF TRANSPORTATION; PETER S. DALEY, DIRECTOR, ENVIRONMENTAL POLICY, U.S. DEPARTMENT OF DEFENSE; AND ROBERTSON J. AUGUSTINE, RADIATION SAFETY OFFICER, NATIONAL INSTITUTES OF HEALTH, U.S. DEPARTMENT OF HEALTH AND HUMAN RESOURCES

Mr. COFFMAN. Mr. Chairman, I am pleased to appear before you today to discuss the Department of Energy's progress and plans with respect to interstate commercial low-level radioactive waste management compacts. In my formal testimony submitted for the record, I discussed each of the points of the committee's concern contained in your letter of invitation.

Consistent with your wishes, I will keep my remarks brief and confine them to what I regard as your principal concerns, namely, extension of the 1986 exclusion date, opening of DOE sites for interim disposal of commercial waste, the compatibility of compacts with the intent of the act, the legality of single State actions, and export bans. We believe that the 1986 exclusion date should not be extended, nor should DOE sites be made available for the interim disposal of commercially generated low-level radioactive waste.

States have accepted the responsibility to provide disposal capacity for their low-level radioactive waste, and significant progress is being made. To a large measure, the 1986 exclusion date is responsible for this. Extension of this date or the opening of DOE sites would only reduce the pace at which States are proceeding.

The delay produced would be unnecessary since States and regions are already exploring methods and agreements for interregional cooperation; such interregional agreements are the most appropriate way to resolve short term disposal problems and establish long-term contingency arrangements, and they should be encouraged.

In the majority of instances, compact language is compatible with the language and intent of the act. It is our understanding, except in establishing State responsibility and endorsing formation of regional compacts to carry out this responsibility, it was Congress intent not to change low-level radioactive waste management practices.

However, clarification of this intent would be beneficial in two key areas: namely, the definition of low-level radioactive waste and the disposal of federally generated low-level radioactive waste. Clarification of the definition of low-level waste is required to insure consistency and uniform application nationwide.

The Nuclear Regulatory Commission in issuing 10 CFR part 61 allows near surface disposal of wastes containing up to 100 nanocuries per gram of transuranic activity. The DOE endorses this limit. Some of the compacts specify low-level radioactive waste as having a maximum transuranic nuclide concentration of 10 nanocuries per gram.

In our opinion, waste containing up to 100 nanocuries per gram of transuranic is low-level waste and is a State responsibility under the act. Clarification of disposal of Federal waste is also required so that the past practice of non-DOE waste being disposed at commercial facilities may continue.

The act authorizes States to form regional compacts and upon consent of Congress to exclude disposal of low-level radioactive waste generated outside the regions after January 1, 1986. It does not, however, prohibit a State from pursuing an individual waste management solution, nor does it address a single State excluding outside waste.

Texas and California are each pursuing the establishment of individual low-level waste disposal facilities. Congress should clarify the legal basis upon which single States may exclude outside waste to assure equal treatment between all regions and States.

Several compacts believe it is necessary to control the export of low-level radioactive waste to facilities outside their borders. The use of export bans should be allowed, but exceptions must be provided for. Export bans are one way to provide a degree of stability to each compact during compact implementation. Each compact should be judged separately as to the necessity of banning the export of waste.

In summary, we believe that the States are to be commended for exercising the options available to them under the act in meeting their low-level radioactive waste disposal responsibilities. There is evidence of good progress and positive momentum appears to be accelerating.

That completes my oral testimony. And I will be happy to answer questions.

The CHAIRMAN. All right. We will now hear from Mr. G. Wayne Kerr, Office of State Programs, Nuclear Regulatory Commission.

Mr. KERR. Thank you, Mr. Chairman. I am pleased to be here to testify on those items requested in your letter of invitation with respect to the development of the status of the interstate compacts. As noted earlier, Senator Gorton and a number of cosponsors representing Northwestern States have introduced Senate bill S. 247 to provide consent for the Northwest compact.

A number of other compacts have reached the point where the negotiators have approved the final compact language and have begun to submit the compacts to their respective State legislatures.

This list includes the Rocky Mountain, Central, Midwest, Southeast, and Northeast.

Texas has embarked on a program to dispose of waste generated within the State through the use of a State authority. California also has a program to identify the feasibility of interim storage of waste generated within that State as well as a long-range search for State disposal sites.

COMPATIBILITY WITH EXISTING LAW AND REGULATIONS

The question of compatibility of the compacts with the Low-Level Waste Policy Act and with existing Federal regulations has been the focus of our comments to the different compact groups.

The principal ones are, first, compacts wherein the scope of the regional program would go beyond disposal into almost all aspects of low-level waste management.

Second, the Northwest compact uniquely provided for a date for exclusion of out of region waste that was 2½ years earlier than the act's date of January 1, 1986, and included some discriminatory aspects between the time of congressional consent and January 1, 1986.

Third, the definitions of low-level waste in a number of compacts did not conform to the statutory definition in the 1980 act. Virtually all compacts have provided for restrictions on the export of waste from the region. In its restriction on import, the 1980 act limits its restriction to disposal of waste, while some compacts would broaden this restriction to include the import of low-level waste for purposes of storage and treatment.

The 1980 act excludes from compact coverage only waste from Department of Energy defense activities, or Federal research and development activities. Some compacts have extended this exclusion to waste generated from other Federal activities.

We have also commented in a number of situations pertaining to the compatibility of the compacts with existing Federal and agreement State regulation. First, in virtually all compacts there is the potential for duplication of existing regulatory authority with the agreement States or the NRC. In all compacts, the question of onsite State inspection of NRC licensees was raised, but we believe this can readily be resolved by an agreement with the NRC.

And some compacts included definitions of transuranic elements for disposal within the regions that were so detailed as to render them actually or potentially to be in conflict with NRC's regulations.

With regard to regulation by agreement States, they may impose requirements that are more stringent than Federal requirements, particularly to take into account local conditions. For example, South Carolina has never allowed the burial of plutonium at the Barnwell site. Further, the three operating sites have had limitations on the volume of liquid which could be buried, although liquids could quite properly be shipped under DOT regulations.

ESTABLISHMENT OF NEW SITES AND INTERIM MEASURES

Regarding the time involved to establish a new low-level site, we estimate this to be on the order of 3 to 4 years from the time a host State is identified until operation.

A number of options might be pursued to alleviate the concern of no new sites being opened by January 1, 1986. For example, States, regions, and licensees can reduce the volume of low-level waste by good management practices. The use of temporary storage represents a method of dealing on a short-term basis with the lack of disposal sites in each region. We believe the best option for dealing with the period before each region has an operational site is through mutual agreements between the regions. Such agreements can prove to be useful, not only in this period before the complete establishment of all disposal sites, but also in the future to handle disposal of waste between regions in emergency or other nonroutine circumstances. We believe that this would obviate the need for Congress to extend the 1986 date or to consider opening up the DOE facilities for commercial low-level waste disposal.

EXPORT BANS

Regarding export bans, although the economic motives underlying the restriction of export are understandable, the restriction could be viewed as an unauthorized and unconstitutional burden on interstate commerce unless Congress consents. It may be useful to allow the export bans to remain in the compacts; however, provisions for exception to such bans for health and safety reasons will have to be accommodated.

I have noted in my prepared statement some items which deserve your attention regarding consistency of the National Nuclear Waste Policy Act of 1982 with the Low Level Waste Policy Act of 1980. However, we do not believe any of the provisions of the Nuclear Waste Policy Act of 1982 pertaining to low-level waste will have an adverse impact on implementation of the Low Level Waste Policy Act of 1980.

Thank you. I would be pleased to answer your questions.

The CHAIRMAN. Thank you.

Mr. Leon D. Santman, Director, Materials Transportation Bureau of the Department of Transportation.

Mr. SANTMAN. Mr. Chairman, you have asked the Department of Transportation to address three items: One, the extent to which the provisions of the evolving compacts are consistent with the existing framework for the transporting and disposal of low-level waste; second, the extent to which the provisions of the compacts are compatible with the Policy Act of 1980; and, third, the effect of a national system on current patterns of transportation.

The Hazardous Materials Act passed in 1974 provides the foundation for the Department's program governing the transportation of hazardous materials. And under that authority, the Department has established a comprehensive body of standards affecting all aspects of the transportation of all forms of hazardous material, including low-level waste and other forms of radioactive material.

In the development, issuance, and implementation of these standards as they pertain to radioactive materials, we work in close cooperation with the Nuclear Regulatory Commission. As part of the Hazardous Materials Transportation Act, there is a provision that provides that any State or local requirement that is inconsistent with that act or any of the standards issued under it is preempted.

To assist us and others in the interpretation and the application of this provision, the Department has engaged in the practice of issuing advisory opinions which we identify as inconsistency rulings. It is these rulings where the Department's views with regard to the validity of various State and local requirements are set forth.

And it is this series of rulings that provides the policy background against which we have examined the provisions of the various interstate compacts that are now evolving. The Department's general approach to the question of preemption and the factors that we consider in issuance of our inconsistency rulings are described in greater detail in my prepared remarks and the attachments thereto. Also, the prepared remarks and the attachments provide the Department's detailed assessment of the seven compacts that we have reviewed to date.

[See attachment C in prepared statement on page 199.]

Mr. SANTMAN. In summary, most of these compacts contain provisions expressly recognizing and preserving the existing Federal-State framework for transportation of low-level waste. There are, however, some provisions in a couple of the compacts that either might be construed as altering the framework or that could provide the foundation for inconsistencies through the downstream implementation by the participating States.

The provisions to which I refer can be divided into three categories: Those that authorize party States to adopt more stringent transportation requirements, particularly with respect to packaging; second, those that require additional documentation to accompany the shipments while they are in transportation; and third, those that deal with the matter of mandatory inspections by the generating States.

Most of the compacts that we have reviewed, however, contain a disclaimer provision which serves to guard against inconsistencies, either in the way the compacts are construed or in their implementation. As pointed out by several of the members of the previous panel of State negotiators, a matter that is of perhaps greater significance in minimizing the likelihood of transportation regulatory inconsistencies growing out of the compacts is the very healthy and growing cooperative relationship between the States and various Federal agencies regarding commercial truck safety, under which Federal standards are being embraced and more fully inspected for by a combination of Federal and State activities.

With regard to the chairman's second line of inquiry, that of compatibility with the Waste Policy Act, it is our reading and our understanding that the Low-Level Waste Policy Act was not intended to alter existing law with regard to the transportation of low-level waste. Thus, our comments that have been included in the prepared testimony with respect to particular compacts regarding their compatibility with existing Federal-State framework apply equally to their compatibility with the intent of the Policy Act as it relates to transportation.

The committee also requested us to discuss the effect of a national system of low-level waste compacts on the current pattern of transportation of such wastes. Quite simply put, the compacts, when in place, will have the effect of substantially reducing the amount of such transportation, and with that, a corresponding reduction in risk to the public generally because a primary component of risk associated with the transportation of any hazardous material involves the total distance traveled.

Therefore, apart from the very minor sources of possible inconsistency that I have alluded to and mention in more detail in the prepared remarks, our Department is very encouraged by the progress that has been made to date in the development of the compacts.

We have been working with the individual States and negotiators, and we look forward to a continued working relationship with the emerging compacts, both in the development of the compacts and in their implementation in the future.

Thank you.

The CHAIRMAN. Thank you. Colonel Peter S. Daley, Director of Environmental Policy, Department of Defense.

Mr. DALEY. Mr. Chairman, I am pleased to have this opportunity to present Defense's views on this issue. Almost all low-level radioactive waste resulting from Defense activities are now disposed of at commercial sites. The largest portion of this is medical, and the second largest portion results from Navy nuclear-powered ship operations. Defense activities generate about 50,000 cubic feet of low-level waste annually, about 1 to 2 percent of the national volume.

We do not expect any significant change in this amount or the nature of the waste in the foreseeable future. We believe the public interest is best served from the standpoint of cost effectiveness and efficiency if we continue to use commercial sites for our purposes, as intended by Congress in the Low-Level Waste Policy Act.

The Low-Level Waste Act does not mention Defense activities such as those I just described, specifically medical and Naval ships operations.

As mentioned earlier today, some State negotiators believe defense related activities should be excluded from compact responsibility. We therefore urge the Congress to consider the need to amend the act and permit our activities access to compact sites.

Alternatively, this could be achieved by amending each compact ratified by the Congress.

We also have some specific concerns with regard to the Northwest interstate compact as it is being developed. The potential problem and concomitant risk of providing temporary storage for DOD waste between 1986 and when all compacts are available throughout the United States can be avoided by guaranteeing DOD access to all compacts regardless of the DOD generator's location.

Second, the compact appears to be beyond the intent of Congress by providing for total management of low-level radioactive waste. By regulating total waste management from generation through disposal, the Northwest compact seems to be assuming authority not intended in the act. Generation and transportation are now comprehensively controlled by Federal regulations.

Furthermore, we are concerned that the proposed requirement for periodic unannounced inspections of low-level waste generators may conflict with DOD security requirements. We do not consider these inspections of our activities either appropriate or warranted.

Third, the proposed compact permits the disposal of waste generated outside the compact only if it is accompanied by a binding agreement by the State of origin to reimburse the compact for any expenses resulting from accidental waste release. It is doubtful that any State would accept liability for Federal waste. This requirement, therefore, places us in an unknown position. Federal liability under these circumstances should be determined under existing statutes, not altered by requirements imposed by State compacts.

We have two specific concerns associated with other compacts as they are developing. Some compact planners are planning to ban the transportation of low-level radioactive waste through their territories to other compact sites.

This may significantly increase future defense costs with little apparent benefit. Other compact planners have indicated that they may ban DOD's waste generated overseas. This is a major problem because we have certain countries that require DOD to return waste generated overseas to this country.

In conclusion, we see a pattern emerging detrimental to our goal of maintaining efficient, continuous defense operations. We would be glad to work with you and your staff to develop amendments as necessary to cover our concerns.

Thank you very much, and I will be glad to answer any questions.

The CHAIRMAN. Thank you very much.

Dr. Robertson Augustine, Radiation Safety Officer, National Institutes of Health.

Mr. AUGUSTINE. Mr. Chairman, I appreciate this opportunity to make a brief statement to you concerning low-level radioactive waste.

I have submitted a written statement, and I will try to summarize briefly what I consider some of the highlights of the written statement.

I also want to mention the somewhat unique or unclear position that a Federal research and development facility such as NIH finds itself in with respect to low-level radioactive waste and the Policy Act and the developing State compacts.

Just for general background information, the NIH is one of the largest users of radioactive materials in biomedical research in the country and perhaps in the world. We estimate that approximately 70 to 80 percent of the research at NIH is performed using radioactive materials. Each of the Institutes, including those dealing with cancer, heart, lung, arthritis, aging, child health, eye, dental, allergies, stroke, and even mental health, among others, uses radioactive materials in its research program. I hope I have not omitted someone's favorite disease.

In 1982, we received over 19,000 shipments of radioactive material coming into NIH for use in the research programs, and these materials are used in the approximately 2,000 radioactive materials research laboratories that we have at NIH.

Almost all of the radioactive materials used in research end up as a radioactive waste. Just about anything that the researcher uses in his experiments or investigation eventually ends up as radioactive waste. As a very large user of radioactive materials, NIH is consequently a generator of a very large volume of low-level radioactive waste.

In my written statement, I have gone into some detail of how we manage low-level radioactive waste at NIH and the methods we use to try to minimize the volumes of radioactive waste that must be shipped to a waste disposal site. But briefly, I might say that we incinerate certain of the radioactive waste. We dispose of some of the liquid radioactive waste through the sanitary sewer system. We store some radioactive waste for decay and then release to the sewer system.

We compact the ordinary laboratory trash, which cannot be burned, into steel drums and ship it as radioactive waste. We do have two 10,000-gallon underground liquid waste retention tanks and try to retain some of the waste for a period of time to allow the radioactivity to decay before releasing to the sanitary sewage system.

A special class of radioactive waste is that resulting from an analytical technique known as liquid scintillation counting. In this procedure, the researcher uses a small glass vial or plastic vial with about 10 milliliters of liquid. This is an example of a liquid scintillation vial. About 60 percent by volume of our radioactive waste consists of drums of these little liquid scintillation vials.

Last year we estimate we disposed of something like 4.5 million liquid scintillation vials from NIH. Most of these went to the low-level radioactive waste site in the State of Washington. A smaller fraction of the total volume went to a waste processor in the State of Texas where the vials are crushed, the liquid drained, and the liquid used as a fuel supplement in a waste incinerator.

As a quick summary of the overall volumes of waste that we must dispose of at NIH, last year we were able to incinerate about 15 tons of low-level radioactive waste; almost 40,000 gallons of liquid radioactive waste were able to be discharged to the sanitary sewage system; and the waste that had to be shipped offsite for burial at a low-level radioactive waste site amounted to almost 2,400 55-gallon drums.

We average about 200 drums of waste a month that must leave NIH. The total weight of the waste shipped is over half a million pounds, and with a volume of close to 18,000 cubic feet of low-level radioactive waste.

We feel that any interruption in our ability to dispose of these wastes at a low-level waste site or perhaps even complete exclusion from the use of such a site can have serious consequences for the biomedical research programs of NIH.

As a Federal research and development facility, however, we do find ourselves in a somewhat uncertain position with regard to disposal of low-level radioactive waste pursuant to the Low Level Radioactive Waste Policy Act. As we understand it, compacts developed pursuant to that act would not apply to the transportation, management, or disposal of NIH waste. We do not find that our wastes are specifically excluded from the regional sites; neither do we find any requirement that a regional site should or must take Federal research and development waste.

Although most draft regional compacts that we have reviewed do have a provision to accept waste from outside the region and there may be economic incentives to encourage State sites to accept NIH wastes, the future for disposal of radioactive waste from NIH research is not clear.

We would encourage the States to proceed in good faith to develop compacts, proceed to develop suitable disposal sites, and would certainly urge the Congress to grant prompt consent to those compacts which meet the intent of the act.

Thank you.

The CHAIRMAN. Thank you very much.

I have a few questions here now I would like to propound to you gentlemen.

Mr. Coffman, in your statement I believe you suggest that interregional agreements are the most appropriate way of resolving short-term disposal problems before new sites come on line. Do you believe that such interregional agreements can in fact be achieved? Also, do you view interim storage with any nonsited region to be a viable and safe alternative?

Mr. COFFMAN. Well, certainly the first preference would be successful compacting and new disposal site licensing activity by 1986. However, if that is not the case, interregional agreements can and will be negotiated, including the possibility—again, somewhat as a last resort—of temporary storage or the exchange of space in the burial grounds from the different compacts.

I think interregional agreements are a workable solution. I think it is a short-time solution to implement. It is preferable to putting at risk the entire compacting operation by slipping the 1986 exclusion date.

The CHAIRMAN. Mr. Coffman, in your prepared statement, you indicate that if DOE were required to accept commercial waste at its sites, DOE would first consult with the State in which the DOE site is located. If that State were opposed to opening the DOE site for that purpose, would DOE still go forward with the interim disposal of commercial waste at that site?

Mr. COFFMAN. Well, I think the position that the Department would take would depend somewhat upon the specific problem that had arisen. The Department's position is that we would not like to open any of our low-level waste sites, but rather handle the commercial low-level waste problem under the aegis of this act which Congress wisely passed.

If there were an insurmountable problem such that interim storage, or interregional agreements did not resolve them, then the Department would be flexible in order to assist in the resolution of this problem.

We would want to precoordinate that with the affected States. In the unfortunate instance that the affected or involved State would not agree, I would treat it somewhat like the high-level waste program, which is similarly contentious, and I have to believe that State and Federal authorities can work out a compromise to resolve the problems.

And that is about as much as I think I can say about that.

The CHAIRMAN. Mr. Coffman, you have suggested the need for clarification of congressional intent in several areas, particularly the definition of low-level waste and the treatment of federally generated low-level waste. Should Congress decide to attach conditions addressing these issues, what would you suggest as the most appropriate definition of low-level waste?

Mr. COFFMAN. Well, I think the appropriate definition of low-level waste is the definition provided in the act and the appropriate definition of transuranic waste is found in 10 CFR part 61 under the NRC regulations. This includes the 100-nanocurie per gram definition of transuranic wastes, and is a rule which received full coordination, not only among all the Federal agencies, but among all the States and compacting States.

I think it represents a rational definition. It is based upon the Federal and international health and safety regulations and represents a uniform and workable definition. I would fully endorse that as a basis for compact definitions of low-level waste.

The CHAIRMAN. Mr. Coffman, with regard to disposal of federally generated waste at commercial sites, please explain in greater detail your reasons for believing that this responsibility should be placed on the States. Could such waste be disposed of at DOE sites? And what practical difficulties would that alternative pose?

Mr. COFFMAN. Well, the major portion of the federally generated defense nuclear low-level wastes are generated under the Atomic Energy Act by the Department of Energy, as far as the nuclear weapons and nuclear R&D programs.

However, there is some 1 or 2 percent of the national low-level commercial waste that is generated by medical facilities and other Federal agencies.

In the past, these wastes have been disposed of routinely in commercial low-level land buried sites throughout the country. The infrastructure and mechanism of disposing of those wastes is already in place. And in view of the low relative volume and the relative stability and predictability of the kinds of waste that will be generated, it seems technically sound to include them under the Low-Level Radioactive Waste Policy Act. If one wanted to change the procedures, of course, these federally generated wastes could, under some new set of rules and guidelines, be disposed of at Federal sites.

Clearly, that is not our recommendation. I think the current system of disposal in commercial sites is quite workable, and DOE supports its continuance.

The CHAIRMAN. Mr. Coffman, could you provide the committee with a written explanation of the types and volumes of federally generated waste not specifically exempted under the policy act.

Mr. COFFMAN. Yes, sir. We would be happy to provide that for the record.

[Material referred to follows:]

The Low-Level Radioactive Waste Policy Act exempts from compacts under the Act or actions taken under such compacts low-level radioactive waste from atomic energy defense activities of the Secretary of Energy and Federal research and development activities. The term "atomic energy defense activities" is explicitly defined, but the term "Federal research and development activities" is undefined by the Act.

Federal non-DOE low-level radioactive waste that is currently shipped for disposal at commercial sites is generated throughout the country, and totals approximately 78,600 cubic feet annually. It is generated primarily from medical and laboratory research, medical diagnosis and treatment, and the operation of nuclear reactor plants. Approximate volumes and types of waste by specific Federal organization are:

Organization	Volume (cubic feet)	Type
Department of Agriculture	3,000	Lab.
Department of Defense:		
Army	12,200	Med/Lab.
Navy	32,000	Med/Lab/nuc. reactor.
Air Force	3,000	Med/Lab.
Department of Health and Human Services:		
National Institute of Health	15,000	Med/Lab.
Center for Disease Control	500	Med/Lab.
Food and Drug Administration	1,000	Lab.
Environment Protection Agency	500	Lab.
National Aeronautics and Space Administration	250	Lab.
National Bureau of Standards	150	Lab/nuc. reactor.
Veterans Administration	11,000	Med/Lab.
Total	78,600	

This total includes both exempt and non-exempt low-level radioactive waste as defined by the Act. The Federal organizations listed produce low-level radioactive waste from both routine operations and from research and development activities. In many cases one facility produces low-level radioactive waste resulting from both routine practices and from research and development. No distinction based on the activity of origin, i.e., routine practice versus research and development, is made in the treatment, packaging or disposal of the low-level radioactive waste produced. Past Practice has been that, except for special or unusual low-level radioactive waste, all low-level radioactive waste shipped for disposal by these Federal organizations has been to commercial disposal facilities.

It should be noted that most non-DOE low-level radioactive waste from Federal medical and laboratory research and development is no different in most cases from low-level radioactive waste produced by research and development performed by private companies, hospitals or universities. Such low-level radioactive waste is composed of paper, rags, used equipment and other items normally considered laboratory trash plus used laboratory fluids and animal carcasses. Additionally, with the exception of animal carcasses, the same types of low-level radioactive waste is produced by medical and laboratory research and development as produced by routine medical and laboratory practices. Low-level radioactive waste from routine operation of Department of Defense nuclear reactor plants is very similar to that produced by commercial nuclear powerplant and includes trash from general maintenance and operating practices and spent resins and filters used in keeping the nuclear system purified. These types of waste are more fully described in: (1) "A Legislators's Guide to Low-Level Radioactive Waste Management" published by the National Conference of State Legislatures; (2) "Managing Low-Level Radioactive Waste: A Proposed Approach", DOE/LLW-9; and (3) "Understanding Low-Level Radioactive Waste", LLWMP-2, both available from the Department of Energy's Low-Level Radioactive Waste Management Program.

Some Federal non-DOE low-level radioactive waste is generated in almost every State. In the case of the Department of Agriculture and the Veterans Administration small amounts of low-level radioactive waste are generated at each of a large number of institutions. A distribution of low-level radioactive waste by generator sector; commercial nuclear power, institutional (university and medical) and industrial, and government and military is provided in the "1981 State-by-State Assessment of Low-Level Radioactive Waste Shipped to Commercial Disposal Sites," DOE/LLW-15T, which is available from the Department of Energy's Low-Level Radioactive Waste Management Program.

It is our judgement based on review of legislative history and discussion with persons involved with legislative activities related to passage of the Act of 1980, that the definitions were intended to provide an exemption from State compacts for all low-level radioactive waste generated by current and future activities of the Secretary of Energy and for other low-level radioactive waste of a special or uncommon nature resulting from research and development activities of other Federal agencies. We believe that Congress did not intend to alter the practice of non-DOE Federal facilities shipping routinely generated low-level radioactive waste resulting from the day-to-day operation of defense nuclear reactor plants, medical research, diagnosis or treatment or from laboratory experiments and tests to commercial disposal facilities. This can be accomplished under the terms of all of the compacts except the Northwest and Rocky Mountain compacts.

The CHAIRMAN. Mr. Coffman, in your prepared statement you indicate that the legal basis for a single State to exclude waste from outside its borders is somewhat ambiguous. Could your office or perhaps the general counsel's office at DOE provide this committee with a detailed legal analysis of the single State option, including a discussion of any proposed clarifying amendments to the policy act.

Mr. COFFMAN. Yes, sir. We would be happy to provide that.

[Material referred to follows:]

The Act provides that each State is responsible for providing for the availability of capacity either within or outside the State for the disposal of LLW generated within its borders. The Act permits States to enter into compacts, which must be consented to by Congress, to provide for the establishment and operation of regional LLW disposal facilities. But the Act does not require the States to participate in regional compacts. Rather, the Act specifically states that LLW disposal capacity is a State responsibility. Therefore, the determination by a State to seek a State rather than a regional solution is consistent with the Act.

The Act provides that a regional LLW compact consented to by Congress may, after January 1, 1986, restrict the use of the regional disposal facilities under the compact to the disposal of LLW generated within the region. If neither authorizes nor prohibits a State from restricting the use of a State LLW disposal facility to LLW generated within the State. While the ability of a State to impose such a restriction is not limited by the Act, it may be limited by other legislation and constitutional considerations.

In order to preserve a proper Federal-State balance, the Department refrains from ruling on the constitutionality of State laws, so that State officials can assess State proposal with their own Attorney-General. It should be noted, however, that Federal courts have ruled on the validity of State statutes that exclude or limit the free flow of commerce among the States. *Washington State Building and Construction Trades Council* v. *Spellman*, 684 F.2d 627 (9th Cir. 1982), held that a State of Washington statute, passed as a popular initiative, was unconstitutional in so far as it banned within the State of Washington the entry of non-medical LLW originating outside the State. The court held that the initiative violated the Commerce Clause since it attempted to interfere with the free flow of commerce, did not effectuate a legitimate local public purpose, and had more than an incidental effect on interstate commerce. The initiative also violated the Supremacy Clause because it sought to regulate Federal activity (Federal waste is routinely transported to a State of Washington disposal facility), and under the Atomic Energy Act of 1954, States are preempted from regulating LLW except in those limited areas proided for in agreements entered into between a State and the Nuclear Regulatory Commission under § 274 of that act. The court noted, however, that if the Northwest Interstate Compact on Low-Level Radioactive Waste is approved by Congress, the State may close its borders in accordance with the provisions of the congressionally approved compact.

In *Philadelphia* v. *New Jersey*, 437 U.S. 617 (1978) (two Justices dissenting), the Court struck down a New Jersey statute prohibiting the importation of most solid or liquid waste originating outside the State. The Court first determined that waste is an article of commerce meriting the protection of the interstate commerce law. It then found that, although the ultimate purpose of the New Jersey statute was legitimate (to protect the quality of the environment of New Jersey), that purpose "may not be accompanied by discriminating against articles of commerce coming from outside the state unless there is some reason, apart from their origin, to treat them differently." 437 U.S. at 2537. The Court stated that its "decisions holding that a State may not award its own inhabitants a preferred right of access over consumers in other states to natural resources located within its borders" are "also relevant here." 437 U.S. at 2537.

In *Reeves, Inc.* v. *Stake*, 447 U.S. 429 (1980), (four Justices dissenting) the policy of the South Dakota Cement Commission that during a cement shortage, the sale of cement produced at a State-owned plant was to be confined solely to State residents, was upheld since the State acted as a market participant and not as a market regutain. Even though the policy restricted interstate commerce, the Court found that when States function in the marketplace like private individuals, they enjoy the power to produce their own supplies and to determine with whom they deal. The court cited *Philadelphia v. New Jersey*, supra, when rejecting petitioners' argument that the State's policy is per se invalid because it responds solely to the nongovernmental objective of protectionism. 447 U.S. at 443. The Court also cited *Philadelphia* when stating that cement is not a natural resource, implying that landfill sites or waste are natural resources. Ibid.

Although there are several other cases that may be helpful in determining the constitutionality of the "single-state option", analysis of the above-mentioned cases is sufficient to illustrate the complexity of the issues involved. Since there is no one dispositive case upon which to rely, if Congress wishes to encourage the use of the option, an amendment to the Act would aid States in making an informed decision on whether or not they should attempt to "go it alone."

In order to assure equity among those States that decide to establish their own disposal facilities and those States that decide to join regional compacts, we suggest that the Act be amended so that a State choosing the single-state option may restrict use of a state disposal facility to in-state wastes after notifying Congress and waiting a specified period of time during which Congress can override the state's decision to restrict out-of-state waste.

The CHAIRMAN. Thank you for your appearance. I have a few questions for Mr. Kerr.

Mr. Kerr, could you explain in relatively simple terms the meaning of various classifications of wastes set out in 10 CFR part 61. Also, what portions of the rule will be regarded as matters of compatibility?

Mr. KERR. Mr. Chairman, part 61 has three classifications of waste, A, B, and C, with the class A wastes being those that are of minimal radioactivity and contamination and require the least restrictions on burial.

Class B wastes require additional containment and stable form, and so forth, and still go to the shallow land burial sites. And the class C must meet more rigorous conditions. And you have heard mentioned the 100 nanocuries per gram for transuranics which would be classified in our part 61 as class C waste and therefore requires the most stringent requirements for burial.

And those matters, Senator, you asked about the matters of compatibility with the agreement States. We consider those things such as definitions, the manifest system, the performance objectives and the technical requirements in part 61 are matters that the agreement States should also adopt.

Those things that are procedural in nature would not be matters of compatibility. We have met with all three of the agreement States with the operating sites to discuss their implementation of part 61. And we expect to continue to work closely with them.

The CHAIRMAN. Mr. Kerr, in your prepared statement, you indicate that temporary storage for up to 5 years represents a method of dealing on a short-term basis with the lack of disposal sites in each region. What procedures would a State or region be required to follow in order to establish such an interim storage facility?

Mr. KERR. Well, Senator, that was primarily implemented through a letter to the utility licensees indicating that we would consider that on site storage as a temporary measure and some of them are storing or taking measures to store onsite for that period of time.

We also did not want that statement interpreted to mean that it was a long-term solution, that they, as well as Government agencies, need to work together to arrive at a long term solution. So some of the utilities certainly are storing or preparing to do that.

It may not be as feasible, I might add, for some of the other licensees like medical, and so on. They can store for a period of time, but I could not give you any definite statement on how any one facility might accommodate waste storage for 5 years or some lesser term.

The CHAIRMAN. Mr. Kerr, if Congress chose to include a condition in its consent legislation to clarify that the provisions of a given compact do not alter the existing Federal-State regulatory framework, what specific language would you suggest to best accomplish that purpose? If you you would like to think over these questions and supply answers for the record you can do that.

Mr. KERR. Somewhere, Mr. Chairman, we have provided such language to some of the compacts, and they have indeed themselves incorporated that language in the compact. We have a paragraph that we think will accommodate that, and I would be happy to submit that for the record. We would be pleased to do that.

[Material referred to was subsequently supplied for the record:]

In order to avoid possible duplication of health and safety regulatory authority of the NRC or agreement States, we believe that an explicit statement such as the following would be appropriate:

Nothing in this compact shall be construed to abrogate or limit the regulatory responsibility and authority of the U.S. Nuclear Regulatory Commission or of an agreement State under section 274 of the Atomic Energy Act of 1954, as amended.

The CHAIRMAN. Mr. Kerr, in what areas do you feel that the need for uniformity is sufficiently compelling that Congress should consider conditions to its consent?

Mr. KERR. Uniformity in what respect, Senator? Like definitions? We believe definitions should be highly uniform. We would be concerned that if they are not, that it will not fit together in a national system to accommodate all low-level radioactive waste.

The CHAIRMAN. What else do you feel should be uniform?

Mr. KERR. Well, I think the thing, you know, the one that has been talked about considerably, the regulatory regime, you mentioned. I think that should be taken care of. Those are the principal ones, I believe.

[The following was subsequently supplied for the record:]

The following are areas where consistency and uniformity for all compacts would be highly desirable:

1. Duplication of the regulatory authority of NRC and/or the Agreement States. This problem area was discussed earlier in the testimony and appropriate language to accommodate it has been suggested.

2. Definitions of low-level radioactive waste and transuranics. A high degree of consistency in definitions would facilitate an effective national system to accommodate all low-level radioactive waste.

3. Federal standards. We believe standards such as for packaging and transportation should be consistent with federal standards unless needed to address particular conditions of a local nature.

4. Discriminatory aspects: The July 1, 1983 cutoff date for importation in the Northwest Compact discriminates against out-of-region States. All other compacts are consistent with the January 1, 1986 cutoff date of the Low Level Radioactive Waste Policy Act. Provisions in the Northwest Compact that deal with requirements for 100 percent inspection for out-of-region waste and liability of other States for accidental release of waste may also be discriminatory and an impediment to interstate commerce.

The CHAIRMAN. What about treatment of Federal waste? Now, one compact—I believe it was the Rocky Mountain compact—includes some provisions that appear to violate the Policy Act. I do not say that it does. I say that it appears to violate the act. I wanted to get your thinking. Maybe you want to think this over and submit in writing a discussion of what you feel is essential to be uniform.

Mr. KERR. I will just comment on that one, Senator. We did comment, I believe, to the Rocky Mountain people and noted that difference in the definition.

The CHAIRMAN. Well, are you ready to express yourself on that now?

Mr. KERR. Well, I think it's primarily a matter to be worked out between the Defense Department or the other Federal agencies and the states. Obviously, I think, you know, consistency and uniformity is desirable.

The CHAIRMAN. We have got to treat all these States alike.

Mr. KERR. Yes.

The CHAIRMAN. We would like you to help us on this matter.

Mr. KERR. Yes, sir. We can submit something for you.

[The aforementioned was subsequently supplied for the record:]

We believe consistency and uniformity with respect to the treatment of federal waste in regional disposal sites is desirable. The NRC understands that some compacts introduced language differing from the Low Level Radioactive Waste Policy Act because of particular uncertainties or apprehensions about how atomic energy defense waste of the Department of Energy will be addressed by the federal government for many years in the future. To be more specific, we understand that some groups are concerned that if they were to follow the legislative language and exclude atomic energy defense waste only of DOE and then through reorganization or other means such wastes become the responsibility of other agencies such as Defense or Commerce, their exclusion would no longer be valid. Perhaps these apprehensions, and the perceived necessity to broaden the language in the compacts to address all eventualities with respect to the agency controlling such atomic energy defense wastes, could be obviated if Congress were to make it clear that the exclusion applies to the atomic energy defense wastes of the Department of Energy or any successor agency.

[illegible]

The CHAIRMAN. If you are going to work something out with one State, you are going to have to work it out with every other State. Keep that in mind.

Mr. KERR. Well—but they may have to make their peace with those Federal agencies.

The CHAIRMAN. What did you say?

Mr. KERR. The individual State or the compact group will have to make their own peace with those Federal agencies, I think.

The CHAIRMAN. We just want to be sure all States are treated the same.

Mr. KERR. We generally believe a high degree of consistency in a whole lot of these areas is the most desirable, including conformance with DOT and NRC standards, and so forth.

The CHAIRMAN. Now, Mr. Kerr, with regard to the issue of management versus disposal, do you not believe that States should have sufficient flexibility to address other issues than those strictly associated with disposal?

Mr. Kerr. I believe certain aspects of management are proper for them to consider. Our concern in expressing those comments to the compacts were that one might read in that they were trying to institute a new regulatory scheme, and we do not have a mechanism for entering into regulatory agreements with compacts. We enter into agreements with the individual States. And I received letters from several indicating that was not their intention. This morning I think you heard several witnesses say it was not their intention to have a new regulatory scheme. We are pleased to hear those.

The Chairman. Do you view the Policy Act as precluding such activities and also what in your view constitutes management activities?

Mr. Kerr. We believe that the better view of the act is that it is more specifically limited to disposal activities at the sites. Management activities certainly have to do with assessment of the volumes generated, how they want to work within their own compact on host States, some criteria for selecting host States and sites, but, you know, in terms of getting into the specific regulatory aspects that affect directly the health and safety on treatment, generation, and disposal should be handled through existing frameworks.

The Chairman. Mr. Santman, I have a few questions for you. Do you still foresee a need for a nationally uniform transportation requirement despite the fact that once the regional system is established, most transportation of waste will be confined to a given region?

Mr. Santman. Yes, we do. We view the transportation of radioactive waste in the broader context of the transportation of hazardous materials, generally. Part of the reason for the documentation requirements, the labeling and placarding requirements that we have for transportation of these materials is to inform in concise predictable ways emergency response personnel. That is one example of why we feel documentation needs to be standardized.

With respect to packaging, it is our view that the existing packaging standards are thoroughly adequate to provide for safe transportation of these materials and comparable materials in other hazardous categories.

The Chairman. Mr. Santman, are you aware of any provisions in other compacts similar to the certificate of compliance requirement in the Northwest compact?

Mr. Santman. I think probably the provisions of the Northwest compact represent to us the kinds of provisions that come nearest to causing us problems. I think it represents the end of the spectrum of the provisions that we have reviewed. Provisions such as that which is included in the Northeast compact and referred to on page 6 of our prepared remarks the other extreme. They support the proposition that there will not be a new regulatory regime generated by the compacts, that transportation is intended to be conducted within the existing framework.

I believe that the other compacts are in between those extremes. We have tried to point that out in specific detail in our prepared statement.

The CHAIRMAN. Mr. Santman, how might the States improve inspection requirements without creating unnecessary delays in transportation?

Mr. SANTMAN. I think we are well on the path to seeing improvements throughout the transportation of hazardous materials by highway arena, not just low-level waste, but hazardous materials generally. This is coming about by increased direct contacts between the Federal agencies, such as my own and our Bureau of Motor Carrier Safety, with their State counterparts under an arrangement whereby there is increased adoption and application of the Federal standards by the State agencies. With a combination of technical and financial assistance from the Federal Government, those State agencies are better able and are indeed fielding better trained and more inspectors with emphasis on the highway transportation of these materials.

The CHAIRMAN. Now, Mr. Santman, to what extent will the compact system reduce transportation of low-level waste? What impact will this have on the cost of low-level waste disposal?

Mr. SANTMAN. I think it is a bit early yet to try to be very precise. We have examined the various projections that have been put together by those that have looked at various scenarios of different combinations of States and different compacts.

I think we can very safely say that public exposure, to the extent that that is a concern, will certainly be reduced by the compacting and the regionalization of the disposal. To predict what that will mean in terms of costs and expense, I think we need to wait a bit longer to find out how many States will go it alone and just what will be eligible for burial in the various compact disposal facilities before we can make any accurate predictions as to the cost impact on transportation.

The CHAIRMAN. Thank you, sir.

Now, Colonel Daley, I have a couple of questions for you. Colonel Daley, as I understand your statement and oral comments, you believe that DOD and other Federal generators not specifically exempted by the Policy Act should have access to the States' disposal sites. However, you also believe that DOD should be able to ship to whatever commercial sites it chooses, regardless of the exclusionary authority granted to the States by the Policy Act.

You also state that DOD generators should not be subject to onsite inspections by the States. I understand your legitimate concerns regarding national security requirements, of course, and public health and safety. But do you see any way to accommodate your interests along with the States' legitimate concerns regarding control of their sites?

Mr. DALEY. Well, with regard, first of all, to the question on shipping across compacts, our interest here is one in protecting the public interest to assure that defense costs are minimized. For example, it would certainly be safer and much less cost to the Federal Government in general and defense specifically if wastes generated, for example, in Wyoming, could be shipped to Colorado, several hundred miles, as opposed to shipped a thousand miles to the State of Washington, depending on how the alinements of compacts actually turn out.

It is certainly ultimately a question of equities that must be resolved, but our immediate reason for making that statement was with regard to minimizing the risk and cost to the taxpayer of maintaining Federal waste disposal operations.

With regard to the issue on security, we feel that the arrangements that are currently used to control shipments of radioactive waste under NRC regulations and DOT regulations are adequate. And we have no security conflict in that case.

One possible way of working out and resolving States' concerns might be through letting the States take on the responsibility of enforcing the NRC or DOT regulations in specific cases.

The CHAIRMAN. Well, now, as I understand your position, you favor the Department of Defense sending its waste to any place it wants to, regardless of whether it came out of that region. Is that right?

Mr. DALEY. That is true, sir, in order to minimize risks and the costs of the program, sir.

The CHAIRMAN. Well, do you not think it would be better for the Department of Defense to send its waste to the site within the region? Why send it out of the region? You see, these States have all entered into regional compacts.

Mr. DALEY. Yes, I understand.

The CHAIRMAN. Now, why not restrict the defense waste in any one region to that region rather than sending it to another region?

Mr. DALEY. It is purely a cost matter, sir.

The CHAIRMAN. Pardon?

Mr. DALEY. It is purely a cost matter; that we could in some cases greatly reduce our transportation costs because a defense site may be much closer to a site in an adjacent compact as opposed to one in the compact in which the generator is located.

The CHAIRMAN. But that is a restriction that commercial generators have to deal with, is it not?

Mr. DALEY. Yes; well, that would depend on whether the export exclusion was permitted or not, sir.

The CHAIRMAN. For instance, if you had a large volume of defense wastes generated in one region, then you want to send it to another region, maybe?

Mr. DALEY. If that was the cost beneficial to the Government, sir.

The CHAIRMAN. Are you saying it would be fairer to distribute this waste over the country and not try to store it all in one place?

Mr. DALEY. Well, there is an equity determination to determine which is the most equitable, but our concern is to speak to reducing and minimizing the cost of the program to the Federal Government and by giving the Federal Government maximum flexibility that would minimize our cost.

The CHAIRMAN. We are interested, too, in the protection of the health of the people in each region, and we do not want any agency of the Government to feel they can just send waste anywhere it pleases because it is a little bit cheaper.

Mr. DALEY. Yes, sir.

The CHAIRMAN. You can understand that, can you not?

Mr. DALEY. Yes, sir.

The CHAIRMAN. In other words, the Policy Act and these compacts and everything we are doing here is to protect the environment and to protect the health of the people. But if any agency of the Government can ship its waste anywhere it pleases, then the States lose control of protecting the health of their people and their environment.

Mr. DALEY. In some cases, it would be safer also to ship to a closer site because transportation distance is a factor in determining the overall safety of the program.

The CHAIRMAN. I just wonder if it would not be a good idea for you to meet with the representatives of the different regions to discuss this matter and maybe work out these issues.

Mr. DALEY. We have designated contacts for each region, for each compact that is being developed, sir, and they have been meeting with them on this and other issues for several months.

The CHAIRMAN. Well, will you continue to meet with them and see if this can be resolved because if it is not resolved in a fair and just and equitable manner, it is not resolved. The problem will continue to arise. Will you continue to work with State representatives?

Mr. DALEY. Yes, sir.

The CHAIRMAN. Would it be possible to dispose of most federally generated waste at DOE sites, and what difficulties would be posed by this alternative?

Mr. DALEY. It is certainly possible; I think the difficulties would arise primarily from the Department of Energy standpoint because it is their sites that would be used up as time went on by the receiving of DOD waste.

The CHAIRMAN. Thank you.

Now, Dr. Augustine, as you are aware, the term "federal research and development activities" is not defined in the Low-Level Policy Act. What, in your opinion, does this phrase encompass?

Mr. AUGUSTINE. Sir, my interpretation of that phrase would be any Federal facility or agency whose prime mission was research and development.

The CHAIRMAN. What site does NIH utilize most frequently?

Mr. AUGUSTINE. Currently, we utilize only one site, and that is in the State of Washington. The reason we go there—well, there are a couple of reasons; one is the State of South Carolina will not take 60 percent of our volume of waste, which happens to be liquid scintillation waste. So we send all of our waste to the Hanford site in the State of Washington. A little over 1,900 drums of waste went to the State of Washington last year.

As a matter of interest, it cost us almost $292,000 to dispose of the waste. Of that portion, about 90 percent or $260,000 went to the waste-site operator and the fees to the State of Washington. So 90 percent of our actual disposal costs go to the operator of the site and fees of the State in regulating the site; 10 percent into transportation.

The CHAIRMAN. What disposal or storage alternatives would be available to NIH if it were not allowed access to the new regional sites?

Mr. AUGUSTINE. About the only alternative that we have, sir, is to accumulate drums or barrels of radioactive waste at the rate of 200 drums a month on the NIH campus.

The CHAIRMAN. What do you think is the best way to handle the waste generated by NIH?

Mr. AUGUSTINE. Sir, I believe there are at least a couple of options that I can think of. One is that the waste from Federal research and development facilities such as NIH probably should be required to go to the regional site within which that facility is located after the region has an operational site.

I think prior to the time that the operating site is opened within that geographical region, Federal agencies should be allowed to send their waste to any site that is willing to take the waste and maybe to more than one site.

The CHAIRMAN. Thank you very much.

I want to express my appreciation to all you gentlemen from these Federal agencies and thank you for your appearance here. We would appreciate your staying in touch with the representatives of these different regions and working with them as best you can.

We have a big problem here, and we have to solve it. It can be solved; but there will have to be some give and take, I presume, on all sides. It is a very important problem in which the American people are deeply interested. Thank you very much.

[Statements supplied follow:]

PREPARED STATEMENT OF FRANKLIN E. COFFMAN

Mr. Chairman and Members of the Committee, I am pleased to appear before you today to discuss the Department of Energy's (DOE) progress and plans with respect to Interstate Commercial Low-Level Radioactive Waste Management Compacts. In my testimony I wish to: (1) reaffirm the Department's support of the letter and intent of the Low-Level Radioactive Waste Policy Act (the Act) of 1980; and (2) discuss the points of Committee concern contained in your letter of invitation.

You will recall, Mr. Chairman, that DOE officials testified at the hearing convened by the Committee in Seattle last November. There, we focused mainly on the Northwest Interstate Compact on Low-Level Radioactive Waste Management. We welcome this opportunity to meet with you once again to consider the broader aspects of the Act.

The status of regional compacts and of States developing low-level radioactive waste disposal sites was reflected in the report we prepared at Senator McClure's request. That report, you may recall, was submitted for the record at the Committee's November hearing. The current situation is as follows:

- The Northwest Interstate Compact on Low-Level Radioactive Waste Management has been negotiated among eight States, ratified by six, and is pending before both Houses of Congress.
- The Rocky Mountain Low-Level Radioactive Waste Compact has been negotiated among six States and ratified by one.
- The Midwest Interstate Compact on Low-Level Radioactive Waste has been negotiated among sixteen States and ratified by one.
- The Central Interstate Low-Level Radioactive Waste Compact has been negotiated among ten States and ratified by three.
- The Northeast Interstate Low-Level Radioactive Waste Compact has been negotiated among eleven States and the proposed compact sent to the Governors. Action by State legislatures is expected to begin shortly.
- The Southeast Interstate Low-Level Radioactive Waste Management Compact has been renegotiated among eight States, with Virginia added

as an eligible State. It has been ratified by one State and establishes 1992 as the closure date for the Barnwell, South Carolina, low-level radioactive waste disposal site.

One other compact has been negotiated, the Mid-Atlantic Interstate Low-Level Radioactive Waste Compact, but its future is in doubt because of the inclusion of Virginia, a pivotal State, in the Southeast Compact.

Several States are listed as eligible States in more than one compact, but will only be allowed membership in one. The sorting out process is now in progress as State legislatures consider the various compacts. Texas and California are each taking steps to establish independent low-level radioactive waste disposal capacity. West Virginia has not participated in the compact negotiation process but has recently indicated that it will seek membership in the Midwest Compact. Puerto Rico, District of Columbia, Virgin Islands, Guam, Northern Mariana Islands, and American Samoa remain unaffiliated.

Simultaneously, activities are underway to establish new low-level radioactive waste disposal sites. Colorado is farthest along with a potential site identified and currently being characterized. A preliminary schedule calling for licensing of the site by 1986 has been developed. California is defining disposal requirements and developing siting criteria. Texas will be conducting site selection activities this spring and summer. Pennsylvania and Massachusetts are also exploring the process for siting low-level radioactive waste disposal facilities.

In the majority of instances compact language is compatible with the language and intent of the Act. It is our understanding, except in establishing State responsibility and endorsing the formation of regional compacts to carry out this responsibility, it was Congress' intent not to change low-level radioactive waste management practices. However, clarification of this intent would be beneficial in two areas: the definition of low-level radioactive waste and the disposal of Federally-generated low-level radioactive waste.

Differences exist between the language of some compacts and the definition of low-level radioactive waste, primarily due to a recent regulatory revision of the maximum permissible transuranic (TRU) activity allowed for near surface disposal. The Nuclear Regulatory Commission (NRC) published 10 CFR

Part 61, on December 21, 1982, which provides the licensing procedures, performance objectives, and technical requirements for disposal of low-level radioactive waste. In 10 CFR Part 61, the NRC uses the same definition for low-level radioactive waste as the Act and allows for certain waste containing up to 100 nCi/g of TRU activity, previously limited to 10 nCi/g, to be disposed in a near surface disposal facility.

This definition is generally accepted throughout the nuclear community. The DOE is in agreement with the 100 nCi/g limit and we understand that the Environmental Protection Agency is also considering this 100 nCi/g limit. However, the language of the Northwest, Southeast, Rocky Mountain, and Midwest Compacts specify low-level radioactive waste as having a maximum TRU activity level of 10 nCi/g. In our judgement waste between 10 and 100 nCi/g is low-level radioactive waste and is a State responsibility. It should be disposed under the provisions of the Act. We believe that Congress should clarify this important matter in the near future to alleviate potential technical and legal issues.

Disposal of low-level radioactive waste generated by activities of the Federal Government is another issue which needs clarification. The Act excludes waste generated as a result of defense activities of the Secretary of Energy or Federal research and development activities. But, other Federal Government activities, including some facilities of the Defense, Agriculture, Veterans Administration, and Environmental Protection agencies, generate low-level radioactive waste. These facilities have NRC or Agreement State licenses and routinely ship low-level radioactive waste to commercial facilities for disposal. In our judgement, it was not the intent of the Act to alter this practice. Language in the Northwest and Rocky Mountain Compacts is in conflict with this intent and should be modified. A Congressional statement on this matter would clarify the disposal policy.

As you know, Mr. Chairman, DOE does not regulate any low-level radioactive waste except for the waste it generates. Low-level radioactive waste generated commercially, or by Federal facilities other than the DOE, is regulated by the NRC or Agreement States and the Department of Transportation, and will be addressed by others.

Concerning the legality of a single State excluding waste from outside its borders, the Act encourages States to form compacts and specifically authorizes regional compacts, upon consent of Congress, to exclude disposal of low-level radioactive waste generated outside their regions after January 1, 1986. It does not, however, prohibit a State from pursuing an individual waste management solution and does not address a single State excluding outside waste. Texas and California are not pursuing a regional solution and are working to establish individual low-level radioactive waste disposal facilities. The legal basis for an individual State to exclude waste from outside its borders is ambiguous and subject to several interpretations. In our judgement, Congress should clarify this legal basis and extend the exclusion provision to individual States to ensure equal treatment.

There are both positive and negative impacts associated with banning export of waste to facilities outside a region. Allowance of export bans should stabilize the management of low-level radioactive waste within each individual region. Each region would have direct control over all the waste generated within its borders.

However, competition between regions for waste is removed and may increase and perpetuate imbalances between regions and also reduce competition between generators. Not all regions generate the same amount of low-level radioactive waste. Regions with large volumes should be able to dispose of waste at a lower unit cost than regions with a smaller volume. Banning export of waste prohibits a generator just inside the border of a small waste volume, high cost region, from transporting the waste to a large volume, low cost regional disposal site which may be closer to the waste generation facility. Nonetheless, we believe that the use of export bans should be allowed. Their use must be conditional, so as to strike a balance between regional control, for the benefit of all generators in the region, and the imposition of unnecessarily severe economic burdens on any one generator. Exceptions to export bans could be granted by each regional commission. Each compact should be judged separately as to the desirability of banning the export of waste.

We believe that the 1986 exclusion date should not be extended and that DOE sites should not be made available for the interim disposal of commercially-generated low-level radioactive waste. States have accepted the responsibility for management of their low-level radioactive waste and are making significant progress in carrying out this responsibility under the conditions set forth in the Act. In our judgement, an extension of the 1986 exclusion date could reduce the pace at which States are proceeding. States and regions are also exploring methods and agreements for inter-regional cooperation. Such inter-regional agreements are the most appropriate way to resolve short term problems with adequate disposal capacity and to estabish long term contingency arrangements and should be encouraged.

Opening of the DOE sites for interim disposal of commercial low-level radioactive waste would have the same impact as extension of the 1986 exclusion date. In our view it reinstitutes a Federal solution for commercial low-level radioactive waste management. Additionally, the DOE does not have the authority to routinely accept such waste for disposal. Even interim storage of the waste at DOE sites poses problems for the Department. The report we prepared in response to passage of the Act, and provided as an appendix to our November 9 testimony, provided a detailed analysis of the interim storage option (pages 34-36).

If the DOE had to accept commercial low-level radioactive waste at any of its sites, it would first consult with the State in which the DOE site is located. The major DOE disposal sites are located in Idaho, Nevada, New Mexico, South Carolina, Tennessee, and Washington. As you can see, none of these major DOE sites is located in those parts of the country most likely to have insufficient disposal capacity, the Northeast and Midwest. The DOE sites with the largest capacity are located in Nevada, South Carolina, and Washington and are adjacent to or in close proximity to operating commercial disposal sites. It was the Governors of these three States who, in 1979, expressed their objections to receiving the Nation's low-level waste and, therefore, started the national debate that culminated in the enactment of the Low-Level Radioactive Waste Policy Act.

I would like to address the impact of the Nuclear Waste Policy Act of 1982 on the development of regional compacts and new low-level radioactive waste disposal sites. Subtitle D of that act should have no adverse impact on the development of new low-level radioactive waste disposal sites. In our judgement, the policy of State responsibility for low-level radioactive waste management has been reaffirmed.

Our preliminary analysis of Subtitle D is that the chance of a new low-level radioactive waste disposal site becoming a financial burden to the host State has been reduced. Additionally, for those low-level radioactive waste disposal sites licensed by the NRC, the law provides that DOE may assume title to these sites if certain conditions are met.

We believe that---in the main---the States are to be commended for exercising the options available to them under the Act in meeting their low-level radioactive waste disposal responsiblities. There is evidence of good progress, and positive momentum appears to be accelerating.

This completes my formal testimony, Mr. Chairman. I shall be pleased to attempt to answer any questions that you or the other Committee members may have at this time.

Prepared Statement of G. Wayne Kerr

Mr. Chairman and Members of the Committee, I am pleased to be here today to testify on those items requested in your letter of invitation with respect to the development and status of interstate compacts under negotiation pursuant to the Low Level Radioactive Waste Policy Act of 1980.

I would first like to discuss the status of compact development. The Northwest Region was quick to respond to the major challenges of the Low Level Radioactive Waste Policy Act. The States and their negotiators who developed this compact, the first interstate compact in the country to be enacted by the required number of qualifying States, are to be commended. Senator Gorton and a number of co-sponsors representing Northwestern States have introduced Senate Bill S.247 to provide consent to the compact. A similar Bill, H.R. 1012, has been introduced in the House.

A number of other compacts have reached the point where the negotiators have approved the final compact language and have begun to submit the compact to their respective State legislatures. This list includes the Rocky Mountain, Central, Midwest, Southeast, Northeast and Mid-Atlantic Compacts. Most of the legislatures in the Southeast enacted compact legislation last year but further negotiation after enactment by the States has resulted in a new compact document that is presently before, or is being introduced into, the legislatures in that region. In some regions a number of legislatures have already enacted the compact. Other regions, particularly the Mid-Atlantic, are at an earlier stage in obtaining legislative enactment and in fact we understand the Mid-Atlantic group is presently inactive. The Northeast Compact has been finalized by negotiators and introduced in at least one State legislature. Texas is embarked on a program to dispose of waste generated within the State through the use of a State authority and recently awarded a contract for site selection. California also has a program to identify the feasibility of interim storage of waste generated within that State as well as a long-range search for State disposal sites. It should be noted that some States will be eligible for membership in more than one compact group. However, it should also be noted that if a less active compact region, such as the Mid-Atlantic, were not to reach fruition and key eligible States chose to join other compact regions instead, there would be some States and political entities--for example, West Virginia, District of Columbia and Puerto Rico--who would find themselves without eligibility in any other regional compact at this time. Enclosure 1 shows a recent compilation of the status of the various States and entities.

The question of compatibility of the compacts with the Low Level Radioactive Waste Policy Act and with existing Federal regulations has been the focus of our comments to the different compact groups. We recognize that the States have a difficult task of molding into the compacts the desires and interests of many diverse parties. We hope that the NRC's comments have contributed to the development of a long-term, efficient, and effective institutional framework for dealing with the problem of low level radioactive waste.

Enclosure 2 is a summary compilation of the issues upon which the NRC has commented. We understand that later versions of some compacts have addressed some of our comments. A number of our comments have addressed the question of compatibility of the compacts with the 1980 Act. The principal ones are:

1. Compacts wherein the scope of the regional program would go beyond "disposal" into almost all aspects of low level waste

management. It is our understanding that the 1980 Act does not grant any additional health and safety regulatory authority to the States with respect to storage, treatment, generation, and transportation of low level radioactive waste but rather is limited to activities commonly performed at the disposal site.

2. The Northwest Compact uniquely provided for a date for exclusion of out-of-region waste that was 2-1/2 years earlier than the Act's date of January 1, 1986. We note that in the bill to grant consent of the Congress to the Northwest Compact introduced by Senator Gorton, Section 3(a) of Article VII provides that the exclusion of out of region wastes shall not take place until January 1, 1986. Even with this change, we are concerned with the discriminatory aspects of the Northwest Compact between the time of Congressional consent and January 1, 1986.

3. Definitions of low level radioactive waste in a number of compacts have not conformed to the statutory definition in the 1980 Act--usually in the direction of being more restrictive than the Act.

4. Virtually all compacts have provided for a restriction on the export of waste from the region while the 1980 Act permits State restriction only on import.

5. In its restriction on import, the 1980 Act limits such restriction to disposal of wastes while some compacts would broaden this restriction to include the import of low level radioactive waste for purposes of storage and treatment.

4. The 1980 Act excludes from compact coverage only waste from Department of Energy defense activities or Federal research and development activities. Some compacts have extended this exclusion to waste generated from Department of Defense and other Federal activities.

The NRC has also commented in a number of situations pertaining to the compatibility of the compacts with existing Federal and Agreement State regulation.

1. In virtually all compacts because of the use of interlocking definitions and terms, there is the potential for duplication of existing regulatory authority of the Agreement States or the NRC. In some there is a potential for conflict with NRC and DOT requirements in the area of packaging and transportation.

2. In all compacts the question of onsite State inspection of NRC licensees was raised. We believe this can be resolved by an agreement as permitted by Section 274i of the Atomic Energy Act of 1954, as amended, between the NRC and each compact State to permit such inspections by State personnel on behalf of NRC.

3. Some compacts included definitions of transuranic elements for disposal within the region that were so detailed as to render them actually or potentially in conflict with the NRC's regulations.

As noted above and in the compilation enclosed, the NRC has commented to a number of compact groups that the exclusion of waste generated by Federal agency licensees went beyond that authorized by the 1980 Act. We have heard no compelling arguments from compact negotiators as to why this exclusion should be broadened. We can foresee an unnecessary burden on Federal licensees of the NRC such as military hospitals, Department of Agriculture installations, etc., if they cannot dispose of their low level radioactive waste in regional disposal sites established pursuant to interstate compacts.

With regard to regulation by Agreement States, they may impose requirements that are more stringent than Federal requirements, particularly to take into account local conditions. For example, South Carolina has never allowed the burial of plutonium at the Barnwell site. Further, the three operating sites have had limitations on the volume of liquid which could be buried, although liquids could quite properly be shipped under Department of Transportation regulations. We do, however, work very closely with the Agreement States to maintain regulations and regulatory practices that are highly compatible. We have met with the regulatory staffs of the three Agreement States with operating sites to discuss implementation of 10 CFR Part 61, Licensing Requirements for Land Disposal of Radioactive Waste.

Regarding the time involved in establishing a new low level radioactive waste disposal site, we estimate this to be on the order of 3-4 years from the time a host State is identified until operation. About one half of this time would be for site identification and characterization and preparation of the license application. The other half would involve the license review process and construction. This time frame can only be considered a rough estimate because no disposal sites have been licensed under the new standards in 10 CFR 61. In fact, the last commercial low level radioactive waste disposal site was licensed in 1971. The occurrence of complex technical problems or prolonged hearings could further increase the time frame.

At a national meeting sponsored by the Northwest group and DOE on "Establishing Regional Compacts for Low Level Waste Management," held in November 1982, there was considerable discussion with respect to the anticipated inability of compact regions, which do not presently have low level waste disposal sites, to have such sites licensed and available to receive waste by January 1, 1986.

A number of options might be pursued to alleviate the situation. For example, States and regions can reduce the volume of low level waste by use of segregation procedures to decrease the volume of uncontaminated materials often disposed with low level waste. Much segregated radioactive waste can be held for decay and ultimately disposed of through means other than in low level waste disposal sites. Volume reduction techniques such as compaction and incineration can be utilized to a greater extent than is presently the case.

The use of temporary storage, for say up to five years, represents a method of dealing on a short-term basis with the lack of disposal sites in each region as well as with short-term emergencies that might come up such as the unexpected closure of a site. However, storage of low level waste for substantially longer periods of time, even at a reactor site for reactor generated waste, cannot be viewed as a reasonable substitute for permanent disposal that is encouraged in the Low Level Radioactive Waste Policy Act. Such long-term storage merely defers the necessity to ultimately dispose of the wastes in a permanent manner.

We believe that the best option for dealing with the period before each region has a licensed and operational site is through mutual agreements between regions whereby those regions with operating sites would continue to accept waste from regions without sites. While the details of such agreements are matters for negotiation between the regions, they could include a requirement that the region lacking an operational site complete a compact document and submit it to Congress for consent and proceed in good faith with a systematic and explicit plan for developing and licensing a new site. During this Committee's hearing in Seattle on November 9, 1982 and the national meeting in Seattle on November 30- December 1, 1982 there were indications that present host States may be willing to make such accommodations. We would hope such accommodations would include the avoidance of regulatory burdens that go beyond those required of party States.

Such agreements between compact regions can prove to be useful not only in this period before the complete establishment of all disposal sites but also in the future to handle disposal of waste between regions in emergency or other non-routine circumstances. We believe that this as well as the other options obviate the need for Congress to extend the 1986 date or to consider opening up the DOE facilities for commercial low level waste disposal. We do not believe opening the DOE sites to commercial low level wastes is the appropriate solution.

As noted earlier, we have commented to many compact groups that the 1980 Act allows restriction only on the import of out of region waste for disposal in a regional site and not a restriction on export. Although the economic motives underlying the restriction of export are understandable, the restriction could be viewed as an unauthorized and unconstitutional burden on interstate commerce unless Congress consents. It may be useful to allow the export bans to remain in the compacts; however, provisions for exception to such bans for health and safety reasons will have to be accommodated.

Finally, we were asked to address the relevance of the Nuclear Waste Policy Act of 1982 to the compacting process with respect to closure of low level waste sites. The Nuclear Waste Policy Act of 1982, while directed principally at high level waste and spent nuclear fuel, does contain several provisions pertaining to low level radioactive waste which deserve comment.

1. The definition of low level waste in the Nuclear Waste Policy Act Sec. 2.(16) gives the Commission authority to classify any material, "consistent with existing law," as low level radioactive waste. We view this as a reserve authority and see no situation at present which requires that we exercise it. In its new regulation, 10 CFR Part 61, the Commission has classified certain concentrations of low level waste as suitable for shallow land burial.

2. Section 151(a) of the Nuclear Waste Policy Act gives the Commission authority to establish requirements for financial arrangements to assure completion of all requirements established by the Commission for decontamination, decommissioning, site closure and reclamation of sites, structures and equipment used in conjunction with disposal of low level radioactive waste. Such financial arrangements are also to be implemented by Agreement States. In addition, if the Commission determines that any long-term maintenance or monitoring, or both, is necessary, it shall insure that before license termination adequate financial arrangements have been made by the licensee to carry out any necessary long-term maintenance or monitoring. We believe these authorities complement the Low Level Radioactive Waste Policy Act by providing assurance that sufficient funds will be available to cover costs of decommissioning of waste burial grounds and any necessary long-term maintenance or monitoring. Considering

that several Agreement States will be affected, the Commission's regulation will have to be flexible enough to accommodate a wide range of financial arrangements.

3. Section 151(b) of the Nuclear Waste Policy Act gives the Secretary of Energy authority to assume title and custody of low level waste and land on which such waste is disposed of, for sites licensed by the NRC, upon request of the owner, provided the Commission makes certain specified determinations. Although this provision could be construed as running counter to the basic policy of the Low Level Radioactive Waste Policy Act, which states that primary responsibility for disposal of low level radioactive waste lies with the States, this type of backing by the Federal government may have a beneficial effect on the compacting process and development of disposal sites. We are working with DOE to establish arrangements for possible implementation of this provision.

4. Section 151(c) of the Nuclear Waste Policy Act provides that the Secretary of Energy shall assume, at the request of the owner, title and custody of low level waste and land on which it is disposed if the waste resulted from a licensed activity to recover zirconium, hafnium and rare earths from source material. The site must have been decontaminated and stabilized in accordance with requirements established by the Commission and the owner must have made adequate financial arrangements for long-term maintenance and monitoring of the site. We do not believe this provision will have any impact on activities conducted pursuant to the Low Level Radioactive Waste Policy Act.

In summary, we do not believe any of the provisions of the Nuclear Waste Policy Act of 1982 pertaining to low level waste will have an adverse impact on implementation of the Low Level Radioactive Waste Policy Act of 1980.

Thank you for providing this opportunity to speak to you today. I would be pleased to answer any questions.

INTERSTATE LOW LEVEL RADIOACTIVE WASTE COMPACTS

LEGISLATIVE STATUS AS OF FEBRUARY 22, 1983

Rocky Mountain

Arizona
Colorado-e
Nevada
New Mexico
Utah*
Wyoming*

Northwest

(S.247
H.R. 1012)

Alaska
Hawaii-e
Idaho-e
Montana-i
Oregon-e
Utah*-e
Washington-e
Wyoming*

Central States

Arkansas-e
Iowa*-i
Kansas*-e
Louisiana-e
Minnesota*
Missouri*
Nebraska*-i
North Dakota*
Oklahoma-i

Midwest

Delaware*
Illinois
Indiana-i
Iowa*-i
Kansas*
Kentucky*
Maryland*
Michigan-e
Minnesota*
Missouri*-i
Nebraska*
North Dakota*-d
Ohio
South Dakota-i
Virginia*
Wisconsin

Southeast

Alabama
Florida
Georgia
Mississippi-i
North Carolina*
South Carolina-i
Tennessee
Virginia*-i

Mid-Atlantic

Delaware*
Kentucky*
Maryland*
North Carolina*
Puerto Rico
Virgin Islands
Virginia*-e
Washington, D.C.
West Virginia

Northeast

Connecticut
Delaware*
Maine
Maryland*-i
Massachusetts
New Hampshire
New Jersey
New York
Pennsylvania
Rhode Island
Vermont

Unaffiliated States

California
Texas

KEY:

*States eligible for more than one compact
e-Enacted
i-Introduced
d-Introduced and defeated

Enclosure 1

NRC COMMENTS ON LOW LEVEL RADIOACTIVE WASTE INTERSTATE COMPACTS

	NW	RM	Cent.	SE*	MW	MA	NE**	Issues included in NRC Comments
Date of Comments	10/14 81	5/6 82	1/28 82	4/6 82	3/12 82	5/27 82	2/9 83	1983 Cutoff. The official date for exclusion of out-of-region waste, as defined in the LLRWPA is January 1, 1986. NRC may suggest to Congress that it solicit testimony from other States as to the impact of the NW Compact's exclusion on States that do not yet have alternate disposal facilities available to them.
	X							
	X[1/]	X	X	X	X	X	X	Scope 1. Management vs. Disposal. Regional program in the draft language goes beyond "disposal" into almost all aspects of LLW management (i.e., storage and treatment). The LLRWPA does not confer additional authority to the States with respect to generation, transportation and any other activities that do not constitute "disposal."
			X	X	X	X	X	2. Regulatory regime. Potential duplication of regulatory authority of Agreement States and/or NRC.
	X	X	X	X	X	X	X	State Inspection of NRC Licensees. The question of on-site State inspection of NRC licensees can be resolved by a 274i agreement with each Compact State. This is separate from the NRC Agreement State Program, under 274b. A State may enter into a 274i Agreement whether or not it has a 274b Agreement.
	X	X	X					LLW Definition. We believe the definition of LLW in the Compact should conform to the statutory definition in the LLRWPA, absent strong reason for a change. Compact definitions not conforming to the Act have been too restrictive.

Enclosure 2

Date of Comments	NW 10/14 81	RM 5/6 82	Cent. 1/28 82	SE* 4/6 82	MW 3/12 82	MA 5/27 82	NE** 2/9 83	Issues Included in NRC Comments
		X	X		X	X	X	Export Restrictions. The LLRWPA allows State restriction only on import, not export, of out-of-region waste for a disposal site. The export restriction could place a burden on interstate commerce.
							X 2/	Limitation on Import to Disposal. The LLRWPA allows, after Jan. 1, 1986, a compact to restrict the use of the regional facilities only to the disposal of LLW. The limitation on treatment and storage could place a burden on interstate commerce.
	X	X		X	X			Transuranics. The level of detail presented here belongs in regulation, not legislation. NRC believes the 10 nanocuries per gram provision should be deleted.
			X		X	X	X	Settlement of Disputes with Commission. The Compact provides that disputes between a party State and the Commission will be reviewed in a U.S. Court of Appeals. The Appeals Court does not have jurisdiction over these types of disputes. If a party State refuses to perform its obligation under the Compact, the States have a basis for taking action in the U.S. Supreme Court.
		X		X	X	X		Exclusion of Defense Waste. The LLRWPA excluded only waste from DOE or federal research and development activities. These compacts have extended this exclusion to waste generated from other federal activities.
			X					Inappropriate Authority. The Compact requires the NRC to process all applications for permits and licenses for a selected site. No authority but Congress is empowered to do this.

1/ Comment made orally.

2/ Comment not made to other compacts, but could have been.

* The Southeast Compact has a recent negotiated version, dated September 10, 1982.

** The Northeast Compact has a recent negotiated version, dated February 10, 1983.

Enclosure 2

PREPARED STATEMENT OF L. D. SANTMAN

I am pleased to appear before the Judiciary Committee today to discuss the Department of Transportation's views regarding the proposed interstate compacts on low-level radioactive waste management. The Committee's letter of invitation to Secretary Dole requested that the Department's testimony address three issues. First, the extent to which provisions of the compacts are compatible with the existing Federal-State framework for the transportation and disposal of low-level radioactive waste; second, the extent to which provisions of the compacts are compatible with the language and intent of the Low-Level Radioactive Waste Policy Act of 1980; and, third, the effect of a national system on current patterns of transportation.

DOT's Regulatory Program

At the outset, I would like to provide a brief description of the Department's existing regulatory program as it relates to the transportation of low-level wastes. The Hazardous Materials Transportation Act (HMTA), enacted in 1975, establishes the broad regulatory authority under which the Department regulates the transportation safety of all hazardous materials in commerce, including radioactive materials. Under that authority, the Department has adopted a comprehensive body of regulations affecting all aspects of the transportation of hazardous materials, including packaging, shipping papers, marking, labeling, placarding, and handling.

As it relates to the transportation of radioactive materials, the Department's authority overlaps the regulatory authority granted the Nuclear Regulatory Commission under the Atomic Energy Act. In order to avoid duplication or conflicts between the two regulatory programs, in 1979 the Department and the NRC entered into a Memorandum of Understanding allocating regulatory responsibilities between themselves (Attachment A). Generally, under this agreement, the NRC is responsible for the development of safety standards for packaging of higher level radioactive materials (those exceeding Type A limits) and for the development of shipment security requirements, and the Department is responsible for developing safety standards for other packaging and all other aspects of transportation. In addition, each agency agreed to adopt and enforce, within the scope of their respective jurisdictions, the regulations developed by the other. As intended, the agreement assured that the pre-existing comprehensive body of regulations applicable to the transportation of radioactive materials would not be duplicated.

Pursuant to this agreement and the authority established in the HMTA, in 1981 the Department issued additional regulations, known as HM-164, relating primarily to the highway routing of radioactive materials. While the primary focus of the rule is the routing of spent fuel and other large quantity radioactive materials, the rule also includes a general requirement that shipments of materials containing lower levels of radioactivity, including most shipments of low-level waste, be transported along the safest and most expeditious routes.

Preemption Under the HMTA

Section 112(a) of the HMTA provides that any state or local requirement that is "inconsistent" with that Act or the regulations issued under it is preempted. To assist in the interpretation and application of this provision, the Materials Transportation Bureau (MTB), which is the agency within the Department that administers the HMTA, has issued regulations establishing procedures for the issuance of advisory "inconsistency rulings." To date, the MTB has issued six such rulings. These rulings set forth the Department's views with regard to the validity of various state and local requirements under the preemptive scheme of the HMTA and establish the policy framework in which we have examined the Northwest and other interstate compacts on the management of low-level wastes. Attachment B, which is an excerpt from one of these rulings, describes the Department's general approach to the issue of preemption and the factors that are considered in issuing inconsistency rulings.

In short, in issuing inconsistency rulings, MTB applies two tests that have been borrowed from judicial precedents: first, whether it is possible to comply with both the Federal regulations and the nonfederal requirement (the "dual compliance" test); and, second, whether the nonfederal requirement presents an obstacle to the accomplishment of the purposes of the HMTA and the regulations issued under it (the "obstacle" test). In applying the "obstacle" test, which in almost all cases is the critical test, the MTB looks to two primary purposes of the HMTA, as expressed in the statute and its legislative history. First, Congress' overriding purpose in adopting the Act was to enhance overall public safety. Thus, if the effect of a nonfederal requirement is to reduce overall safety, it is inconsistent with the HMTA. Second, in adopting the preemption provision of the HMTA, Congress expressed a purpose to promote uniformity in the area of hazardous materials transportation. Thus, if the effect of a nonfederal requirement is to interfere substantially with the uniform regulatory system established by the Federal regulations, then it is inconsistent with the HMTA.

Compatibility With Existing Federal-State Framework

At the request of the Department of Energy, and in response to an inquiry by Senator McClure, the Department has examined the proposed compacts in the context described above. Attachment C is the Department's detailed response to that inquiry. In short, most of the proposed compacts contain provisions expressly recognizing and preserving the existing Federal-State framework for the transportation of low-level radioactive waste. However, some of the compacts do contain provisions that either might be construed as altering that framework or that, as implemented by the states, might result in inconsistencies with the Federal requirements. These provisions can be divided into three categories:

- Those that authorize party states to adopt more stringent transportation requirements;
- Those that require additional shipment documentation; and
- Those that require mandatory inspections.

First, the Northwest and Rocky Mountain Compacts both contain provisions that authorize party states to adopt more stringent packaging and other transportation requirements than those required by the compacts. Therefore, the compacts would appear to permit party states to adopt packaging standards and other requirements for transportation that differ from those contained in the Federal Hazardous Materials Regulations. With regard particularly to packaging standards, the MTB has taken the position in its inconsistency rulings that its standards are exclusive for transportation, and that any deviations from them are inconsistent under the HMTA. This position is based on the conclusion that to permit state and local governments to adopt differing container standards could result in incompatible requirements and would not be conducive to safe transportation. This potential for inconsistency could be eliminated by the inclusion of a limitation provision, such as, "To the extent authorized by Federal law," in the provisions authorizing additional or more stringent standards.

Second, the Northwest Compact requires shipments generated by non-party states to be accompanied by a certificate containing certain information. The MTB has taken the position in its inconsistency rulings that its shipping paper requirements are exclusive for transportation. The basis for this position is that, since the primary function of shipping papers is to provide a warning, particularly to emergency response personnel, of the hazardous nature of the cargo, any deviation from or addition to the Federal shipping paper requirements would tend to increase confusion and the possibility of errors in interpretation. Therefore, if the compact is construed as requiring the certificates for transportation, that requirement would be inconsistent under the HMTA. If, on the other hand, that provision is construed as requiring the certificates only at the disposal site, it would not be inconsistent.

Finally, the Northwest Compact requires that a shipment originating in a non-party state be inspected by an official of that state and that the official must certify that the shipment complies with all applicable requirements.

Similarly, while not explicitly requiring mandatory inspections for each shipment, the Central and Rocky Mountain Compacts require each party state to adopt procedures to ensure that shipments originating in each state comply with all applicable transportation requirements. As implemented by the party states, these requirements may result in imposition of mandatory inspection requirements.

The Department strongly endorses the policy of increasing state enforcement of requirements that are consistent with the Federal regulations, and that appears to be the effect of these provisions. However, the possibility exists that, as implemented by the states, these requirements may result in unnecessary delays in transportation. The MTB has taken the position in its inconsistency rulings that unnecessary delay is incompatible with public safety because it results in an increase in public exposure to risk, and that requirements may be inconsistent under the HMTA if they result in such delay. Therefore, while the requirements for inspections, themselves, are entirely consistent, the states should take precautions to ensure that, in implementing the requirements, they do not cause unnecessary delays.

As described above, some of the compacts may result in various inconsistencies as implemented. To assure that this result does not occur, low-level waste compacts drafted in other regions contain disclaimer provisions such as the following:

> Nothing in this compact shall be construed to abrogate or limit the applicability of any act of Congress or diminish or otherwise impair the jurisdiction of any Federal agency expressly conferred by Congress.

Inclusion of such a provision in all of the compacts would reduce the potential for interpretations that could lead to the adoption of requirements that are inconsistent under the HMTA.

Compatibility With Low-Level Radioactive Waste Policy Act

It is our understanding that the the Low-Level Radioactive Waste Policy Act was intended not to alter existing law with regard to the transportation of low-level waste. Thus, the comments above with regard to the compatibility of the compacts with the existing Federal-State framework apply equally to their compatibility with the intent of that Act as it relates to transportation. With regard to the compatibility of the compacts with other aspects of that Act, the Department would defer to the other Federal agency representatives.

Effect of Compacts on Transportation

The Committee's invitation also requested that the Department discuss the effect of a national system of low-level waste compacts on the current pattern of transportation of such wastes. Quite simply, the compacts will have the effect of substantially reducing the amount of such transportation. The general result of the compacts will be that it will be possible to dispose of low-level wastes much closer to their points of origin. For example, according to data developed by the State of Washington, well over half of the low-level waste delivered to the commercial disposal facility at Richland, Washington, originates in either the Northeast or the Southeast. Once disposal facilities are developed in those regions, those wastes will be disposed of within the region of origin rather than across the country at Richland.

With regard to transportation safety, there will be a corresponding reduction in risk to the public because a primary component of risk in transportation is distance travelled. Therefore, apart from the minor sources of potential inconsistency discussed above, the Department is very encouraged by the progress made to date in the development of the compacts, and we look forward to working closely with the compact states in the future as they implement the compacts.

This completes my prepared remarks. I will be pleased to respond to any questions you may have.

ATTACHMENT A

MEMORANDUM OF UNDERSTANDING
BETWEEN
DEPARTMENT OF TRANSPORTATION
AND
NUCLEAR REGULATORY COMMISSION

(FR 38690, July 2, 1979)

DEPARTMENT OF TRANSPORTATION

Nuclear Regulatory Commission

Transportation of Radioactive Materials; Memorandum of Understanding

The roles of the Department of Transportation and the Nuclear Regulatory Commission in the regulation of the transportation of radioactive materials were described in a memorandum of understanding signed on June 8, 1979. The present memorandum supersedes a 1973 agreement between the Atomic Energy Commission and the Department of Transportation. A text of the memorandum is set forth below.

Radioactive Materials

Abstract. This agreement delineates the respective responsibilities of the Department of Transportation (DOT) and the Nuclear Regulatory Commission (NRC) for the regulation of safety in transportation of radioactive materials. It supersedes the existing agreement executed on March 22, 1973, between the DOT and the Atomic Energy Commission. Generally, the DOT is responsible for regulating safety in transportation of all hazardous materials, including radioactive materials, and the NRC is responsible for regulating safety in receipt, possession, use, and transfer of byproducts, source, and special nuclear materials. The NRC reviews and approves or denies approval of package designs for fissile materials and for other radioactive materials (other than low specific activity materials) in quantities exceeding Type A limits, as defined in 10 CFR Part 71.

Agreement Between the DOT and the NRC. The Department of Transportation (DOT), under the Transportation of Explosives Act (18 U.S.C. 831-835), the Dangerous Cargo Act (R.S. 4472, as amended; 46 U.S.C. 170), Title VI and section 902(h) of the Federal Aviation Act of 1958 (49 U.S.C. 1421-1430 and 1472(h)), the Department of Transportation Act (49 U.S.C. 1655), and the Hazardous Materials Transportation Act (49 U.S.C. 1801-1812), is required to regulate safety in the transportation of hazardous materials, including radioactive materials.

The Nuclear Regulatory Commission (NRC), under the Atomic Energy Act of 1954, as amended (42 U.S.C. Chapter 23), and Section 201 of the Energy Reorganization Act of 1974, as amended (42 U.S.C. 5841), is authorized to license and regulate the receipt, possession, use, and transfer of "by product material," "source material," and "special nuclear material" (as defined in 42 U.S.C. 2014). The NRC authority to license air shipment of plutonium is further governed by Pub. L. 94-79.

For the purpose of developing, establishing, and implementing consistent and comprehensive regulations and requirements for the safe transportation of radioactive materials, and avoiding duplication of effort, the DOT and the NRC agree, subject to their respective statutory authorities, as follows. Terms used in this agreement are defined in 49 CFR Parts 100-189 and 10 CFR part 71.

I. Development of Safety Standards.

A. The DOT (in consultation with the NRC) will develop safety standards for the classification of radioactive materials, for the design specifications and performance requirements of packages for quantities of radioactive materials (other than fissile materials) not exceeding Type A limits and for low specific activity (LSA) radioactive materials; for the external-radiation fields, labeling, and marking of all radioactive materials packages and vehicles; for the mechanical condition, construction requirements, and tie-down requirements of carrier equipment; for the qualifications of carrier personnel; for the procedures for loading, unloading, handling, and storage in transit; for any special transport controls (excluding safeguards) necessary for radiation safety during carriage; and for all other safety requirements except those specified in the next paragraph.

B. The NRC (in consultation with the DOT) will develop safety standards for design and performance of packages for fissile materials and for quantities of other radioactive materials (other than LSA materials) exceeding Type A limits in the following areas:

1. [illegible]
2. [illegible]
3. [illegible]
4. [illegible]
5. [illegible]

[illegible]

II. Adoption of Safety Standards and Regulations

A. The DOT will adopt regulations imposing on shippers and carriers subject to its jurisdiction those standards developed by the DOT and the NRC pursuant to Section I of this Memorandum of Understanding and any additional requirements necessary to protect the public health and safety. The DOT will require NRC approval of designs of packages for shipment of fissile materials and other radioactive materials in quantities exceeding Type A limits (except LSA materials) by all persons subject to the jurisdiction of the DOT. The DOT will issue complete and comprehensive Federal regulations for the packaging and transportation of all radioactive materials as a part of its overall body of Federal regulations (49 CFR Parts 100-189) for the packaging and transportation of all hazardous materials.

B. The NRC will adopt packaging standards for fissile materials and for quantities of other radioactive materials (other than LSA materials) exceeding Type A limits and will adopt regulations imposing on its licensees administrative, procedural, and technical requirements necessary to protect the public health and safety and to assure the common defense and security.

C. The NRC will adopt procedures, standards, and criteria for approval of package designs and for approval of special transport controls proposed by the applicant for a given package design. The NRC will require its licensees to comply with the DOT regulations when those persons are not otherwise subject to the DOT regulations.

III. Package Review

A. The DOT will submit to the NRC for review the following package designs:

1. [illegible]

2. [illegible] through or over the United States between origins and destinations outside the United States, the DOT has the responsibility for exercising discretion as to whether it requests NRC review of such packages.

3. Any package for which NRC evaluation is warranted in DOT opinion.

B. The NRC will evaluate package designs for fissile materials and for other radioactive materials (other than LSA materials) in quantities exceeding Type A limits and will, if satisfactory, issue approvals thereto (viz., a license, Certificate of Compliance, or other package approval) directly to the person requesting the approval.

IV. Inspection and Enforcement

A. Each agency will conduct an inspection and enforcement program within its jurisdiction to assure compliance with its requirements. The NRC will assist the DOT, as appropriate, in inspecting shippers of fissile materials and of other radioactive materials in quantities exceeding Type A limits.

B. The DOT and the NRC will consult each other on the results of their respective inspections in the areas where the results are related to the other agency's requirements, and each will take enforcement action as it deems appropriate within the limits of its authority.

V. Accidents and Incidents

A. The DOT will require of all carriers subject to its jurisdiction the notification and reporting to the DOT of accidents, incidents, and instances of actual or suspected leakage involving radioactive material packages if such an event occurs in transit and the DOT will promptly notify the NRC of such events.

B. The NRC will require of its licensees the notification and reporting to the NRC of accidents, incidents, and instances of actual or suspected leakage involving radioactive material packages [illegible]

[illegible] The DOT may either participate, as appropriate, in the investigation, with the NRC as the lead agency or conduct a separate investigation. Subsequent to each investigation involving radioactive material regulated by the NRC, the NRC and the DOT will jointly define the scope of the enforcement actions to be taken by each agency to assure that shippers and carriers are subject to concurrent and equivalent enforcement actions but not unduly subject to duplicate enforcement actions.

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[1] States which have entered into an Agreement with the Atomic Energy Commission or the NRC pursuant to Section 274 of the Atomic Energy Act of 1954, as amended, under which the NRC has relinquished to such States the majority of its regulatory authority over source, byproduct and special nuclear material in quantities not sufficient to form a critical mass.

C. This section V does not affect the authority of the National Transportation Safety Board, which is independent of the DOT and the NRC, to receive accident reports and to investigate transportation accidents.

VI. National Competent Authority

A. The DOT will be the national competent authority with respect to the administrative requirements set forth in the regulations for the Safe Transport of Radioactive Materials of the International Atomic Energy Agency (IAEA). In issuing certificates of competent authority for the United States under these regulations, the DOT will require for certain packages other than DOT specification containers an NRC approval in accordance with Section III.A of this Memorandum of Understanding. The NRC will provide to the national competent authority (DOT) technical support and advice pertaining to the transportation of radioactive materials.

B. The DOT will act as the representative of the United States to the IAEA and other international groups for matters pertaining to the international safety regulation of transportation of radioactive materials. The NRC will provide technical support and advice to the DOT for this activity.

VII. Exchange of Information

A. Prior to issuance of their regulations on matters relating to transportation of radioactive materials, each agency will inform and consult with the other, to avoid possible conflicts in regulations and to assure that: (1) the regulations will afford adequate protection of the health and safety of the public; (2) the effect of these regulations will not be inimical to the common defense and security of the United States; and (3) the regulations are in the public interest.

B. The DOT and the NRC will exchange information, consult and assist each other within the areas of their special competence in the development and enforcement of regulations and procedures. Each agency will make available to the other, subject to security requirements and statutory provisions affecting the release of information, summaries of inspection records, investigations of serious accidents, and other matters relating to safety in the transportation of radioactive materials.

VIII. Working Arrangements

The NRC and the DOT will designate appropriate staff representatives and will establish joint working arrangements from time to time for the purpose of administering this Memorandum of Understanding.

IX. Effect

A. Nothing herein is intended to affect the statutory exemption of shipments of radioactive materials made by or under the direction or supervision of the Department of Energy or the Department of Defense in accordance with the provisions of 10 U.S.C. 882(c).

B. This agreement shall take effect upon the signing by authorized representatives of the respective agencies, and shall supersede in its entirety the March 22, 1973, Memorandum of Understanding between the DOT and the Atomic Energy Commission.

C. Nothing in this Memorandum of Understanding is intended to restrict the statutory authority of either the DOT or the NRC.

Dated at Washington, D.C. on [illegible]

For the United States Department of Transportation.

[illegible]

[illegible]

For the United States Nuclear Regulatory Commission.

[illegible]

Chairman, Nuclear Regulatory Commission.

[illegible]

[illegible]

ATTACHMENT B

B. General Authority and Preemption under the HMTA

With certain exceptions, the HMTA imposes obligations to act only on the Secretary of Transportation. Obligations are imposed on members of the public only by substantive regulations issued under the HMTA. Known as the Hazardous Materials Regulations (HMR), they are codified at 49 CFR Parts 107–179, and mostly predate the HMTA. The HMR previously were authorized by the Explosives and Other Dangerous Articles Act (18 U.S.C. 831–835), which was repealed in 1979. (Pub. L. 96–129, Nov. 30, 1979). The HMTA was enacted on January 3, 1975 and the HMR were reissued under its authority, effective January 3, 1977 (41 FR 38175, September 9, 1976). Subsequent amendments to the HMR have been issued under the authority of the HMTA and with the preemptive effect granted by that Act.

With regard to highway transportation of hazardous materials, the HMR apply to persons who offer these materials for transportation (shippers), those who transport the materials (carriers) and those who manufacture and retest the packagings and other containers intended for use with the materials. The scope of transportation activity affected includes the packaging of shipments of hazardous materials; package markings (to show content) and labeling (to show hazard); vehicle placarding (to show hazard); handling procedures such as loading and unloading requirements; care of vehicle and lading during transportation; and the preparation and use of shipping papers to show the identity, hazard class, and amount of each hazardous material being shipped. The HMR also require carriers to report in writing to DOT any unintentional release of a hazardous material during transportation. In some cases, an immediate report must be made in addition to the subsequent written report.

A discussion of the preemptive effects of the HMTA appears in previous inconsistency rulings. The discussions in IR–2 (44 FR 75566) and IR–3 (46 FR 18918) are extracted and summarized here.

The HMTA at section 112(a) (49 U.S.C. 1811(a)) preempts "any requirement of a State or political subdivision thereof, which is inconsistent with any requirement set forth in (the HMTA) or regulations issued under (the HMTA)." This express preemption provision makes it evident that Congress did not intend the HMTA and its regulations to completely occupy the field of transportation so as to preclude any State or local action. The HMTA preempts only those State and local requirements that are "inconsistent."

In 49 CFR Part 107, Subpart C, the MTB has published procedures by which a State or political subdivision thereof having a requirment pertaining to the transportation of hazardous materials, or any person affected by the requirement may obtain an administrative ruling as to whether the requirement is inconsistent with the HMTA or regulations under the HMTA. At the time these procedures were published, the MTB observed that "the determination as to whether a State or local requirement is consistent or inconsistent with the Federal statute or Federal regulations is traditionally judicial in nature." (41 FR 38167, September 9, 1976). There are two principal reasons for providing an administrative forum for such a determination. First, an inconsistency ruling provides an alternative to litigation for a determination of the relationship of Federal and State or local requirements. Second, if a State or political subdivision requirement is found to be inconsistent such a finding provides the basis for an application for a determination by the Secretary of Transportation as to whether preemption will be waived. (49 U.S.C. 1811(b); 49 CFR 107.215–107.225)

Since the proceeding here is conducted pursuant to the HMTA, the MTB will consider only the question of statutory preemption. A Federal court may find a State requirement not statutorily preempted, but nonetheless preempted by the Commerce Clause of the U.S. Constitution because of an undue burden on interstate commerce. However, the Department of Transportation does not make such determinations. Also, under earlier legislative authority, the applicability of the HMR was statutorily limited to carriers in interstate and foreign commerce and their shippers and did not apply to carriers in wholly intrastate commerce and their shippers. Although the HMTA at section 103(1) (49 U.S.C. 1802(1) authorizes application of its regulation to intrastate commerce that affects interstate commerce, the MTB has excercised this expanded jurisdiction only on a case-by-case basis (e.g., hazardous wastes and hazardous substances). However, laws and regulations of States and political subdivisions applying to intrastate carriers may be preempted, notwithstanding the fact that the Department of Transportation normally does not regulate such carriers, if the laws and accompanying regulations are found to be inconsistent with the HMTA.

Given the judicial character of the inconsistency ruling proceeding, the MTB has incorporated case law criteria for analyzing preemption issues into the preemption procedures at 49 CFR 107.209(c):

(1) Whether compliance with both the (State or local) requirement and the Act or the regulations issued under the Act is possible; and

(2) The extent to which the (State or local) requirement is an obstacle to the accomplishment and execution of the Act and the regulations issued under the Act.

The first criterion is the dual compliance or direct conflict test and concerns those State or local requirements that are incongruous with Federal requirements; that is, compliance with the State or local requirement causes the Federal requirement to be violated, or vice versa. The second criterion, in a sense, subsumes the first and concerns those State or local laws that, regardless of conflict with a Federal requirement, stands as "an obstacle to the accomplishment and execution of the (HMTA) and the regulations issued under the (HMTA)." In determining whether a State or local requirement presents such an obstacle, it is necessary to look at the full purposes and objectives of Congress in enacting the HMTA and the manner and extent to which those purposes and objectives have been carried out through the MTB's regulatory program.

In enacting the HMTA, Congress recognized that the Department of Transportation's efforts in hazardous materials transportation regulation lacked coordination by being divided among the various transportation modes, and lacked completeness because of gaps in DOT's authority, most notably in the area of manufacturing and preparation of packagings used to transport these materials. In order to "protect the Nation adequately against the risks to life and property which are inherent in the transportation of hazardous materials in commerce" (49 U.S.C. 1802), Congress consolidated and expanded the Department's regulatory and enforcement authority.

Specifically with respect to the preemption provision, the legislative history of this provision indicates that Congress intended it "to preclude a multiplicity of State and local regulations and the potential for varying as well as conflicting regulations in the area of hazardous materials transportation." (S. Rep. No. 1192, 93rd Cong., 2nd Sess. 37 (1974))

ATTACHMENT C

US Department
of Transportation

**Research and
Special Programs
Administration**

400 Seventh Street, S.W
Washington, D.C 20590

July 29, 1982

J. William Bennett, Acting Deputy Director
Division of Waste Repository Deployment
  and Remedial Action
Office of Nuclear Energy
U. S. Department of Energy
Washington, D.C. 20545

Dear Mr. Bennett:

Thank you for your letter of June 29, 1982, requesting this Department's views regarding the consistency of proposed low-level radioactive waste compacts with the Department's hazardous materials transportation program. Specifically, your letter requests a response to the following inquiry set forth in a letter of January 26, 1982, from Senator McClure to Secretary Edwards:

> With respect to each compact or draft compact listed under paragraph 3 above, please provide your Department's analysis as to whether such compact or draft compact: . . .
> (c) is consistent with existing Federal-State relationships concerning the regulation (including licensing and inspection) of waste generators and concerning the regulation of packaging and transportation of waste.

The context in which we have reviewed the proposed compacts is set by section 112(a) of the Hazardous Materials Transportation Act (HMTA) (49 U.S.C. 1811(a)), which provides that State and local requirements that are not "inconsistent" with the Federal requirements are preempted. To assist in the interpretation of this provision, the Department has adopted a procedure for issuing advisory inconsistency rulings (49 CFR 107.201-.211). To date, the Department has issued four such rulings, and, while this response does not constitute a formal ruling, our analysis of the proposed compacts reflects our holdings and statements of policy in those rulings.

Your letter enclosed copies of seven proposed compacts for the following regions: Northwest, Rocky Mountain, Midwest, Central, Southeast, Mid-Atlantic and Northeast. We recently completed a thorough analysis of the proposed Northwest Compact, and our complete comments are incorporated in Enclosure A, a letter to Mr. Larry L. Lloyd of the State of Montana. Enclosure B consists of our comments on the other six proposed compact.

We have also received from your office a copy of a letter dated March 25, 1982, from Mr. G. Wayne Kerr of the Nuclear Regulatory Commission (NRC) addressing the same inquiry from Senator McClure. That letter states that the Atomic Energy Act preempts states from regulating NRC licensees except to the extent permitted by an agreement under Section 274b of that Act. Our discussion of inconsistency under the HMTA, on the other hand, is applicable to state regulation of persons who are not NRC licensees, such as regulated carriers. Since only State requirements that are "inconsistent" under the HMTA are preempted, it follows that states are free to adopt and enforce "consistent" requirements relating to such nonlicensees without a mechanism such as the Atomic Energy Act's Agreement State program.

In general, we are very pleased with the great progress made by the states in the development of the proposals. With the few exceptions noted in the enclosures, we anticipate no serious inconsistencies between the proposals and the Department's hazardous materials transportation program, and we look forward to working closely with the Department of Energy and with the states to assure that potential inconsistencies are avoided. If I can be of further assistance, please let me know.

Sincerely,

L. D. SANTMAN

L. D. Santman
Director
Materials Transportation Bureau

Enclosures

ENCLOSURE A

U.S. Department
of Transportation

Research and
Special Programs
Administration

400 Seventh Street, S.W.
Washington, D.C. 20590

2 5 MAR 1982

Mr. Larry L. Lloyd
Chief, Occupational Health Bureau
Department of Health and Environmental
Sciences
State of Montana
Helena, Montana 59620

Dear Mr. Lloyd:

Your letter of January 12, 1982, to Howard Dugoff, Administrator of the Research and Special Programs Administration, concerning the Northwest Low-Level Radioactive Waste Compact Committee, has been forwarded to this Office for reply. Your letter requests our comments on any potential conflicts between the Federal Hazardous Materials Regulations (HMR) and the "Draft Requirements for Users of Washington's Low-Level Waste Disposal Facilities."

The context in which we have reviewed the Draft is set by § 112(a) of the Hazardous Materials Transportation Act (HMTA) (49 U.S.C. 1811(a)), which provides that State and local requirements that are "inconsistent" with the Federal requirements are preempted. To assist in the interpretation of this provision, the Department has adopted a procedure for issuing advisory inconsistency rulings (49 CFR 107.201-.211). To date, the Department has issued four such rulings, and, while this response does not constitute a formal ruling, our comments reflect our holdings and statements of policy in those rulings.

While the Draft itself does not appear to contain any direct inconsistencies with the HMR, the regulations derived from it may produce inconsistencies in at least three areas: differing transportation container standards, shipping paper requirements, and mandatory inspections.

With respect to differing transportation container standards, the Department has taken the position that the HMR establish the exclusive standards for hazardous materials containers while in transportation. This position is based on the conclusion that to permit State and local governments to adopt differing container standards could result in incompatible requirements and would not be conducive to safe transportation.

Paragraph 1.(c) and the last sentence of paragraph 1.(e) of the Draft section entitled "Acceptable Shipments of Waste" appear to permit the adoption of container standards for transportation that differ from the HMR. They should therefore be clarified to eliminate the possibility of inconsistencies. Of course, states may adopt container standards for disposal of wastes that are more stringent than the HMR. Indeed, the HMR standards for low-level waste containers are performance standards, so that, if a state chooses to adopt more stringent container standards for disposal, shippers may package waste so as to be in compliance with both the HMR and the state's disposal requirements. To reiterate, however, application of such a requirement to a shipment while in transportation would be inconsistent with the HMR.

Similarly, with respect to shipping paper requirements, the Department has taken the position that the HMR establish the exclusive requirements for hazardous materials shipping papers while in transportation. The basis for this position is that, since the primary function of shipping papers is to provide a warning, particularly to emergency response personnel, of the hazardous nature of the cargo, any deviation from the HMR requirements would tend to increase confusion and the possibility of errors in interpretation. As in the case of container standards, this is not to suggest that states may not adopt documentation requirements for purposes of waste disposal management which are enforceable at the disposal facility, but application of such requirements to the transportation of such wastes would be inconsistent with the HMR.

While the Draft itself appears to be consistent with this position, several provisions may invite inconsistency in their implementation and administration. Paragraph 2 of the section entitled "Acceptable Shipments of Waste" refers to a "Radioactive Shipment Report", which must contain certain information regarding each package "offered for disposal." It appears that the intent is that the Report is required only at the point where the waste is offered for disposal. This being the case, there is no inconsistency with the HMR. However, as discussed above, application of the requirement for the Report to carriers while in transportation would be inconsistent. Similarly, Paragraphs 3 and 5.(c) of the same section and Paragraph 2 of the section entitled "Waste Shipment Certification" require non-party state certifications as a condition for acceptance of waste at a disposal facility. As long as these certification requirements are not applied to transportation, there is no potential for inconsistency with the HMR. Finally, Paragraph 1.(a) of the section entitled "Waste Shipment Certification" requires a "Generator/Broker/Carrier Certification" as a condition for acceptance of waste at a disposal facility. Again, it is assumed that this requirement is intended to be applied only at the disposal facility, rather than in transportation, but the first sentence of that paragraph does provide that the certification must accompany each shipment "to the facility." The requirement would be inconsistent with the HMR if applied in transportation.

With respect to mandatory inspections, Paragraphs 3 and 5 of the section entitled "Acceptable Shipments of Waste" and Paragraph 2 of the section entitled "Waste Shipment Certification" establish mechanisms for requiring mandatory inspections by non-party states of waste shipments originating in those states. The Department strongly endorses the policy of increasing State enforcement of requirements that are consistent with the HMR, and that appears to be the effect of these provisions. However, the possibility exists that, as implemented by non-party states, these requirements may result in unnecessary delay in transportation. The Department's position is that unnecessary delay is incompatible with public safety because it results in an increase in public exposure, and that requirements may be inconsistent with the HMR if they result in unnocessary delay. Therefore, while the goal of increased inspections and enforcement of consistent requirements is entirely consistent with the HMR, the party states may wish to take precautions to assure that, in implementing the mandatory inspection requirements, non-party states do not cause unnecessary delay.

If I can provide you with further assistance, please let me know.

Sincerely,

L. D. Santman
Director
Materials Transportation Bureau

ENCLOSURE B

MIDWEST AND MID-ATLANTIC COMPACTS

These two compacts contain identical provisions that appear to eliminate any possibility of inconsistency under the Hazardous Materials Transportation Act (HMTA). Article V.d. of the Midwest Compact and Article III.d. of the Mid-Atlantic Compact both provide: .

> To the extent authorized by federal law, each party state shall enforce any applicable federal and state laws and regulations pertaining to the packaging and transportation of waste generated within or passing through its borders.

The introductory limitation, "To the extent authorized by federal law," appears to be an express acknowledgement of the primacy of Federal law in the area of packaging and transportation. Accordingly, any State law that is inconsistent, and therefore preempted, under the HMTA, would presumably not be "applicable" for purposes of the mandate for enforcement contained in Article V.d.

The primacy of Federal law is also expressly recognized in Article VII.a. of the Midwest Compact and Article VIII.a. of the Mid-Atlantic Compact which provide:

> Nothing in this compact shall be construed to:
>
> 1. abrogate or limit the applicability of any act of Congress or diminish or otherwise impair the jurisdiction of any Federal agency expressly conferred by Congress;

The apparent effect of this disclaimer is that the preemptive language of the HMTA would apply fully to any requirements adopted by party states pursuant to the compact. Therefore, the proposed compacts are entirely consistent with the HMTA.

CENTRAL COMPACT

The Central Compact contains provisions (Article III.e. and Article VI.a.l.) that are virtually identical to the provisions of the Midwest and Mid-Atlantic Compacts discussed above, and, therefore, there appears to be no possibility of inconsistency under the HMTA. However, one cautionary note should be added. Article III.e. also provides that each party state--

> agrees to adopt practices that will ensure that waste shipments originating within its borders and destined to a regional facility within another party state will conform to the applicable package and transportation laws and regulations of the host state.

As discussed in more detail in Enclosure A, while the Department strongly encourages increased State enforcement of consistent requirements, we have adopted the view that State requirements that cause unnecessary delay in transportation have a detrimental effect on public safety and are therefore inconsistent under the HMTA. Therefore, in instituting inspection practices pursuant to Article III.e., party states should assure that such practices will not result in unnecessary delay.

SOUTHEAST COMPACT

The Southeast Compact contains a provision, Article III.d., relating to the enforcement of applicable laws that is similar to provisions of the other compacts discussed above:

> Each party state shall establish the capability to enforce any applicable federal or state laws and regulations pertaining to the packaging and transportation of waste generated within or passing through its borders.

The principal difference between this provision and those of the other compacts is that the Southeast Compact does not contain the introductory limitation, "To the extent authorized by federal law." The absence of this limitation might be construed as permitting party states to adopt requirements that would be inconsistent under the HMTA, and it would therefore be helpful to revise the provision to include the limitation.

However, the compact also contains a provision, Article VI.a.l., that is identical to the disclaimer provision regarding the applicability of Federal law that is contained in the other compacts discussed above. We construe the net effect of these two provisions to be that, since the compact does not affect the applicability of the preemption provision of the HMTA, any requirement of a party state adopted pursuant to the compact that is inconsistent under the HMTA would be preempted and would therefore not be "applicable" for purposes of the mandate for enforcement contained in Article III.d. If this construction is correct, there is no potential for inconsistency between the Southeast Compact and the HMTA.

ROCKY MOUNTAIN COMPACT

The Rocky Mountain Compact contains a provision mandating enforcement that is similar to those discussed above:

> Each party state:
> (1) agrees to adopt and enforce procedures requiring low-level waste shipments originating within its borders and destined for a regional facility to conform to applicable packaging and transportation requirements and regulations. . . . (Article 3.F.(1))

As in the Southeast Compact, this provision does not contain the introductory limitation, "To the extent authorized by federal law." The potential for inconsistencies under the HMTA is compounded by the subsequent provision of that section that provides: "Each party state . . . (5) may impose requirements or regulations more stringent than those required by this subsection." (Article 3.F.(5)) This potential would be eliminated by inserting the quoted limitation at the beginning of Section F, so that the section begins, "To the extent authorized by Federal Law, each party state . . ."

The Rocky Mountain Compact also does not contain a disclaimer provision regarding the applicability of Federal law, such as those contained in the other compacts discussed above. As discussed above, inclusion of such a provision would further reduce the potential for interpretations of the compact that would be inconsistent under the HMTA.

NORTHEAST COMPACT

The Northeast Compact contains a provision authorizing the adoption of more stringent requirements that is similar to the provision of the Rocky Mountain Compact discussed above:

> A host State may establish requirements and regulations pertaining to the packaging, transportation and disposal of low-level waste which are more stringent than Federal regulations. However, such requirements shall not impose unreasonable impediments to the transportation and disposal of low-level waste within the region. (Article III.f.)

The potential exists that host states could adopt requirements under the authority of this provision that would be inconsistent under the HMTA. As in the Rocky Mountain Compact, that potential can be eliminated by inserting the limited phrase, "To the extent authorized by Federal law", at the beginning of Article III.f.

The Northeast Compact also contains provisions limiting State authority over enforcement of applicable transportation requirements "to the extent authorized by Federal law" (Article III.b.1.) and disclaiming any effect on the applicability of Federal laws (Article VI.a.1.) that are similar to the provisions of the Midwest and Mid-Atlantic Compacts discussed above. Accordingly, there appears to be no other potential for inconsistency under the HMTA.

PREPARED STATEMENT OF PETER S. DALEY

Mr. Chairman and Members of the Committee:

I am pleased to have this opportunity to appear before your Committee to discuss Department of Defense (DoD) views on interstate compacts for the disposal of low-level radioactive waste. My comments pertain to both Public Law 96-573, the Low-Level Radioactive Waste Policy Act, and to the provisions of some of the compacts that are now under development pursuant to that statute.

Low-level radioactive wastes resulting from national defense activities are currently disposed of in the existing commercial burial sites. Included are low-level radioactive wastes from the military medical programs and defense related activities of the Army, Navy, and Air Force. Medical programs account for about one-fourth of the volume; the largest portion of the remainder is low-level waste generated at naval shipyards and other support facilities which maintain the Navy's nuclear powered ships. In 1981, DoD activities generated approximately 50,000 cubic feet of low-level radioactive waste. This represents between 1% and 2% of the national low-level waste volume. DoD considers it imprudent to establish disposal sites on its own lands for our wastes. We believe that the public interest is better served from the points of view of efficiency, cost-effectiveness, and public health and safety if we use commercially available low-level waste disposal sites, as conceived under the framework established by Congress in the Low-Level Radioactive Policy Act. Development of a single DoD-owned site to handle our small amount of waste would increase shipping distances between sites of generation and disposal; development of several DoD-owned sites would greatly increase the disposal costs and represent an undesirable proliferation in the number of low-level waste sites in the country.

The Low-Level Radioactive Waste Policy Act specifices that states are responsible for providing disposal capacity for low-level waste except for waste generated as a result of defense activities of the Secretary of Energy or Federal research and development activities. The Act is silent on the subject of activities of the Department of Defense such as those I have previously described. We believe this wording has caused some problems. Some state negotiators believe that all defense-related wastes are excluded from disposal within their compact's borders. We urge Congress to amend P.L. 96-573 specifically to permit low-level wastes generated by the Department of Defense to be disposed of at all sites developed under the compacts, thus permitting unrestricted access by DoD. Alternatively, this result could be achieved by amending each compact before it is ratified by the Congress.

DoD has four specific concerns related to the Northwest Interstate Compact, as proposed in S. 247. Since this is the first compact to be considered by Congress, action on it may set a precedent and may influence other compacts.

First, S. 247 prevents DoD activities that generate low-level radioactive waste located outside the Northwest compact's member states' borders from using disposal sites located inside the compact after 1986. Since it is unlikely that required disposal capacity will become available in all regions of the country prior to that time, DoD may be forced to store low-level waste for the indefinite period until adequate disposal capacity becomes available throughout the United States. Such long-term temporary storage poses unnecessary risks to public health and safety, and increases costs. Prompt disposal at the closest low-level waste disposal site is strongly preferred. In addition, in some cases it appears that DoD may be able to save transportation and disposal costs by utilizing a site outside the DoD generator's compact region.

Secondly, S. 247 appears to go beyond P.L. 96-573 by providing for total management of low-level waste. We believe that Congress, in P.L. 96-573, intended compacts to regulate disposal of low-level waste primarily through a mechanism designed to assure adequate disposal capacity. However, by regulating the total management of low-level waste, from generation through disposal, the states in the Northwest compact are assuming an authority not conferred upon them by this Act. We believe low-level waste generation and transportation are already adequately controlled through a comprehensive series of federal regulations. Furthermore, we are most concerned that the requirement in S. 247 for periodic, unannounced inspections of the premises of low-level waste generators may conflict with DoD security requirements. Shipments of low-level waste from DoD generators must, of course, comply with all applicable regulations. If they do not, present regulations prohibit shipment until deficiencies are corrected. The control of generation and storage of low-level waste activities is totally severable for the purpose of P.L. 96-573. We do not consider inspections of DoD operational activities where low-level waste is generated either appropriate or warranted.

Third, S. 247, Article IV(3)(D), provides (on an interim basis) that low-level waste generated outside the compact party states may be accepted for disposal within the Northwest compact region only if such waste is accompanied by "a binding agreement by the state of origin to reimburse any party state for any liability or expense incurred as a result of an accidental release of such waste during shipment or after such waste reaches the facility." Since it is doubtful that a state would accept any liability for federally generated wastes, this requirement places the DoD in an unknown position in those cases where we must or would like to send wastes across compact borders. Federal liability under these circumstances should be determined under existing statutes and not altered by requirements imposed by various state compacts.

Fourth, we draw your attention to an inconsistency in the definition of low-level radioactive waste between S. 247 and the definition contained in NRC regulations, 10 CFR 61, "Licensing Requirements for Land Disposal of Radioactive Waste." S. 247, Article II(2), excludes radioactive waste containing more than 10 nanocuries per gram of transuranic radionuclides. NRC regulations, however, define low-level waste on the basis of specific radionuclides contained in the waste and includes a limit of 100 nanocuries per gram for transuranic radionuclides. We believe that it is essential in a comprehensive national regulatory scheme to utilize a well-understood, consistent definition of low-level radioactive waste.

I would like to briefly identify a few specific DoD concerns associated with other compacts.

Representatives of the Midwest Interstate Low-Level Radioactive Waste Compact have read P.L. 96-573 to specifically exclude waste generated as a result of all defense activities of the Federal government or Federal research and development activities. Representatives of other compacts have also questioned whether DoD generators may use their sites. Further, some compact planners are contemplating banning the transportation of low-level radioactive waste, to include DoD waste, through their territory enroute to another compact's disposal site. Other compact planners have indicated they may ban DoD low-level radioactive wastes generated overseas. This would be harmful to US interests because some existing status of forces agreements require DoD waste generated overseas to be returned to the United States for disposal.

In general, we see a pattern emerging detrimental to national defense interests. We believe that the solution is for Congress to modify the exclusion contained in P.L. 96-573, to assure that activities of the Secretary of Defense unrelated to weapons research and development are provided for by the state compacts. Alternatively, we recommend that Congress, in the approval process, amend each interstate compact to resolve the problem.

CONCLUSION

In conclusion, in the interest of maintaining efficient, continuous defense operations, we believe DoD activities should have access to any and all commercial disposal sites without regard to compact jurisdictional location. Our preference is to use the disposal site closest to the point of generation; this would usually be a site within the state or compact where that DoD activity is located. DoD would, of course, be subject to compliance with all applicable health, safety and environmental regulations concerning that site.

If you desire we would be pleased to work with your staff to develop amendments to the Low-Level Radioactive Waste Policy Act, and to amend S. 247 to cover DoD concerns.

Mr. Chairman, I would like to again express my appreciation for the opportunity to appear before you and your Committee today.

I will be pleased to answer your questions and to provide any information you might require.

PREPARED STATEMENT OF ROBERTSON J. AUGUSTINE

Mr. Chairman and Members of the Committee:

My name is Robertson J. Augustine and I am the Radiation Safety Officer for the National Institutes of Health in Bethesda, Maryland, and am also the Chief of the Radiation Safety Branch of the Division of Safety, NIH. I appreciate this opportunity to make a brief statement to you concerning low-level radioactive waste and, in particular, the importance of the use of radioactive materials to biomedical research, the types of low-level radioactive wastes that are produced in biomedical research, and some insight into the NIH low-level radioactive waste management program. This brief summary will hopefully highlight the need for action by the States to develop and ratify regional low-level radioactive waste compacts, acceptable to the Congress and to develop regional low-level radioactive waste burial sites as prescribed by the Low-Level Radioactive Waste Policy Act. I also want to mention the somewhat unique position of a Federal research and development facility, such as the NIH, with respect to the Low-Level Radioactive Waste Policy Act and the State compacts.

The National Institutes of Health is one of the largest users of radioactive materials in biomedical research. We estimate that approximately 70 to 80 percent of the research conducted at NIH is performed with the help of radioactive materials. Each of the Institutes, including those deaing with cancer, heart, lung, arthritis, aging, child health, eye, dental, allergies, stroke, and even mental health, among others, uses radioactive materials in its research programs. In 1982, NIH received over 19,000 shipments of radioactive materials for use in biomedical research and medical diagnosis and treatment. These materials are used in approximately 2,000 research laboratories and there are approximately 4,500 persons at NIH registered with us for radiation safety purposes.

Almost all of the radioactive materials used in research or medical diagnosis and treatment ends up as radioactive waste, except for the radioactivity that decays through its physical process and essentially disappears as a radioactive substance. This, of course, is a function of its radioactive half-life and the passing of time. Although the researcher may start out with a very small volume of radioactive material, such as one milliliter, in a highly concentrated form, through the process of carrying out the research or investigation, a much greater volume of radioactive waste is produced, generally with much, much lower concentration of radioactivity.

Low-level radioactive waste produced in biomedical research may contain just about anything the researcher used or collected during the experiment, such as bench paper, paper towels, paper tissues, rubber gloves, glassware, plastic ware, syringes, laboratory coats and other protective clothing, liquids and fluids, biological speciments, cell cultures, animal carcasses, and animal and human excreta, among others. Essentially anything containing or contaminated with the radioactive materials used in the research becomes radioactive waste, including laboratory equipment that can not be decontaminated to an acceptable level. With any of these types of radioactive waste, the choice of method to manage and dispose of the waste depends on the degree of potential hazard, i.e., the specific characteristics of the radioactive contaminant, the amount of radioactivity present, and the physical form of the waste, as well as the regulatory requirements, constraints, and dispensations.

As a very large user of radioactive materials in research, the NIH is consequently a generator of a very large volume of low-level radioactive waste. I would like to briefly summarize the radioactive waste management procedures at NIH. Radioactive wastes are placed in specially-labeled containers by the researchers in the laboratories. The wastes are collected from the laboratories and brought to a central area for processing. Processing includes sorting, segregating, assaying, monitoring, solidifying, and packaging for incineration, storage, or transport and disposal off site. Combustible solid wastes and animal carcasses, depending on the radionuclide and the amount of radioactivity involved, may be disposed through incineration in the large pathological incinerator located at NIH, in accordance with the requirements of the U.S. Nuclear Regulatory Commission (NRC). Those solid radioactive wastes which are not suitable for disposal by incineration are compacted using a hydraulic ram into 55-gallon steel drums, the drums are properly sealed, and transported off site for disposal by burial in a low-level radioactive waste site. Animal carcasses which contain radionuclides that could be incinerated, but the amount of radioactivity is too high, are stored in a large freezer for the period of time necessary to allow the radioactivity to decay to a level suitable for incineration. Those carcasses which can not be incinerated under any conditions must be specially packaged in steel drums and shipped off site for burial in a low-level radioactive waste site.

Liquid radioactive wastes present a special problem. After assay to determine the radionuclides present and their concentrations, in accordance with the regulatory requirements of the NRC, the liquid wastes may be released directly to the sanitary sewerage system, stored in the two 10,000-gallon underground liquid radioactive waste retention tanks at NIH for a period of time sufficient to allow the radioactivity to decay prior to release to the sanitary sewerage system, or as necessary, solidified with cement to form concrete in a 55-gallon steel drum, sealed, and shipped off site for burial as radioactive waste. The specific radionuclides present and the concentration of radioactivity determine the method of processing and disposal.

Low-level radioactive wastes resulting from an analytical technique known as liquid scintillation counting (LSC) is a unique class of low-level waste. This waste consists of small glass or plastic vials which contain usually 5 to 10 milliliters of fluid. The fluid or liquid consists of a chemical mixture known as the "scintillation cocktail" mixed with the experimental sample to be analyzed for radioactivity content. The experimental sample may be tissue specimens, liquids, filter papers, dissolved solids, cells, etc. After analysis using the liquid scintillation counter, the vials and their liquid contents become a low-level radioactive waste. The scintillation cocktail generally is composed of a toluene or xylene based solvent with additives to provide the ability to scintillate or give off visible light when energy is absorbed from radiation being emitted by the experimental sample, and must be carefuly handled with consideration of the flammability and chemical toxicity of its components. Thus, LSC wastes must be managed for both its radioactivity content and its chemical content. At NIH, the LSC wastes are sorted as to those vials that contain only radioactive carbon-14 or radioactive hydrogen-3 (tritium), and those that contain other radionuclides such as iodine-125, sulfur-35, or phosphorus-32. The vials are appropriately packaged in 55-gallon steel drums, sealed, and shipped off site for disposal. In accordance with the requirements of the U.S. Nuclear Regulatory Commission, those LSC wastes that contain only carbon-14 or tritium in concentrations of 0.05 microcuries or less per gram of medium may be disposed of without regard to its radioactivity. That is, these LSC wastes are not required to be classed as "radioactive waste." The other LSC wastes, containing other radionuclides, are low-level radioactive waste and must be shipped off site for burial at a low-level radioactive waste site. Currently, the NIH LSC wastes containing only carbon-14 and tritium are shipped to a waste processor where the vials are crushed, the liquid drained from the crushed glass and plastic, and the liquid used as a fuel supplement in a waste incinerator. The segregation of LSC wastes and the opportunity to dispose of a portion of these wastes by a means other than burial as low-level radioactive wastes has resulted in a substantial savings in disposal costs as well as saving the waste burial site capacity for those radioactive wastes that require ground burial.

The volumes of low-level radioactive waste generated and disposed of by NIH may be of interest. In calendar year 1982, approximately 29,800 pounds (about 15 tons) comprising a volume of about 4,350 cubic feet, as packed for incineration, of dry solid radioactive waste and animal carcasses was incinerated at NIH. Liquid radioactive wastes amounting to approximately 39,000 gallons were disposed of at NIH in accordance with NRC guidelines. In addition, about 2,300 gallons of liquid radioactive waste were solidified into concrete in steel drums and shipped to the commercial low-level radioactive waste site in Washington State amounting to a shipped weight of 39,800 pounds and a volume of 450 cubic feet. The solid radioactive wastes which could not be incinerated were compacted into steel drums, with an average volume reduction after compaction of about 2.5 to 1. Compacted and packaged for shipment, these wastes amounted to approximately 141,500 pounds comprising a volume of about 5,200 cubic feet, and were shipped to the Washington State site. Animal carcasses amounting to about 26,500 pounds and a volume of about 900 cubic feet, which could not be incinerated, were packed and shipped for burial at the Washington State site.

From January through June 1982, all LSC wastes were packed for disposal by burial as radioactive waste. Beginning in July 1982, the LSC vials were segregated and disposed either as radioactive waste or sent to a processor. The number of individual LSC vials disposed of in 1982 is estimated to be approximately 4.5 million. When packed for shipment and disposal, the LSC wastes amounted to approximately 350,000 pounds comprising a volume of about 11,300 cubic feet. Of this total volume of LSC wastes, about 7,800 cubic feet were sent for burial as radioactive waste to the Washington State site, while about 3,500 cubic feet were disposed of through a waste processor in Texas. A summary of the quantity of low-level radioactive waste disposed of at NIH or shipped from NIH in 1982 and the specific types of wastes are presented in the following tables:

DISPOSAL OF RADIOACTIVE WASTE BY NIH - 1982
(in accordance with NRC requirements)

Incinerated at NIH	4,350 cubic feet
Released to Sanitary Sewer	39,000 gallons
Shipped for Burial	14,350 cubic feet
Shipped to Processor	3,500 cubic feet

SPECIFIC TYPES AND QUANTITIES OF RADIOACTIVE WASTE
SHIPPED FROM NIH IN 1982

Waste Type	No. Drums (55-gal.)	Packed Weight	Packed Volume
Dry, Compacted	694	141,500 lbs.	5,200 cu. ft.
Carcasses	119	26,500 lbs.	900 cu. ft.
Solidified Liquids	60	39,800 lbs.	450 cu. ft.
LSC Vials			
For Burial	1044	350,000 lbs.	7,800 cu. ft.
For Processing	461		3,500 cu. ft.
Totals	2378 drums	557,800 lbs.	17,850 cu. ft.
Quantity Shipped to Low-Level Radioactive Waste Site	1917 drums		14,350 cu. ft.

It is obvious that even though methods are employed to minimize the volume of low-level radioactive wastes that must be disposed off site, (i.e., by incineration, release to sanitary sewerage system, storage for decay, and compaction of dry wastes), there is still a substantial volume of waste that must be disposed of by burial at a low-level radioactive waste site. Any interruption of the ability to dispose of these wastes at a low-level waste site, or perhaps even complete exclusion from the use of such site, can have serious consequences for the biomedical research programs of the NIH.

However, as a Federal research and development facility, the NIH finds itself in a somewhat uncertain position with regard to disposal of low-level radioactive wastes pursuant to the Low-Level Radioactive Waste Policy Act and the developing State compacts and regional disposal sites. As we understand it, compacts developed pursuant to the Act would not apply to the transportation, management, or disposal of NIH wastes. Although we do not find our radioactive wastes to be specifically excluded from a regional site, neither do we find any requirement that a regional compact site should or must take Federal research and development wastes. Naturally, we would not want to see any discrimination against radioactive wastes from Federal research and development facilities, either in accepted volumes or in price for disposal, just because the wastes originate at a Federal facility. Although most draft regional compacts that we have reviewed do have a provision to accept waste from outside the region, and there may be economic incentives to encourage State sites to accept NIH waste, the future for disposal of radioactive wastes from NIH research is not clear. We believe it is important that the developing compacts and the Congress have a clear understanding of this fact.

In conclusion, I believe it is extremely important and urgent that States proceed in good faith to follow the mandate of the Low-Level Radioactive Waste Policy Act in developing regional compacts and appropriate disposal sites for low-level radioactive wastes, and that the Congress give prompt consent to those compacts which meet the intent of the Act. Although my remarks have addressed only the importance of the use of radioactive materials to the biomedical research mission of the National Institutes of Health, with the resultant generation of low-level radioactive wastes, equal importance attaches to the use of radioactive materials in medicine, education, and industry, with the same need for an appropriate solution to the problem of disposal of low-level radioactive wastes.

This concludes my prepared statement. I would be pleased to answer questions that you might have.

The Chairman. Our next panel is representing industry and the medical community: Mr. Sherwood H. Smith, Jr., chairman and chief executive officer, Carolina Power & Light Co., on behalf of the Edison Electric Institute and the American Nuclear Energy Council; Mr. Jon D. Shoop, Dr. Shoop, president, American College of Nuclear Physicians.

Let's see. Mr. Smith.

STATEMENTS OF SHERWOOD H. SMITH, JR., CHAIRMAN AND CHIEF EXECUTIVE OFFICER, CAROLINA POWER & LIGHT CO., ON BEHALF OF THE EDISON ELECTRIC INSTITUTE, UTILITY WASTE MANAGEMENT GROUP AND THE AMERICAN NUCLEAR ENERGY COUNCIL, ACCOMPANIED BY MAX M. DE LONG, MANAGER, SPECIAL NUCLEAR PROGRAMS, NORTHERN STATES POWER CO., AND JON D. SHOOP, PRESIDENT, AMERICAN COLLEGE OF NUCLEAR PHYSICIANS

Mr. Smith. Mr. Chairman, I also have with me, if I may, Dr. Max M. DeLong, on my right, who is manager of special nuclear projects of Northern States Power Co., and he is here today as the current chairman of our Utility Nuclear Low-Level Waste Management Group, if he may sit with me.

The Chairman. We are glad to have you with us. Dr. Shoop, we are also glad to have you with us. And Captain Briner, you are going to sit on this panel, too. All right, we will be very pleased to hear from you now, Mr. Smith. We look upon you as an able executive down in the region that you represent. I believe you are the chief executive officer of Carolina Power & Light Co. You have a big responsibility there. You are also representing several other groups. You may proceed.

Mr. Smith. Thank you very much, Mr. Chairman. It is a pleasure to have the opportunity to appear before you today and to testify concerning this very important regional low level nuclear waste disposal compact matter. These compacts, as has been stated, are being established pursuant to the Low-Level Radioactive Waste Policy Act of 1980, which is Public Law 96-573.

I represent the American Nuclear Energy Council, the Edison Electric Institute, and the Utility Nuclear Waste Management Group.

I would like to express appreciation also for this committee's prompt and continuing attention to the matter. The parties whom I represent do support regional low level waste disposal as both an equitable and a publicly acceptable course.

And we continue to encourage all of the States to act expeditiously in entering into regional compacts. We think that if this process is successful, that regional initiatives may prove to be an effective means for addressing other areas perhaps of similar concern.

In this congressional session and the next there will be several regional compacts that are expected to come before Congress for its consent. The many parties here represented believe that it is very essential that as these compacts come before Congress that they be carefully examined to see that they do provide a mechanism that is fully capable to insure that the various regional compacts can function together as an efficient and integrated nationwide system for low-level nuclear waste disposal that is consistent with the Policy Act.

There has been significant progress made to date, and we commend the States for their efforts. There are several provisions, however, that appear in certain contexts which we believe should have close scrutiny by Congress, and I would like to address a few of the most important of those provisions, if I may.

First, as presently drafted, the compacts do not provide for a consistent and uniform definition of low-level waste. A uniform understanding of what materials are being considered for disposal at regional facilities would facilitate cooperation among the regions and it would help assure that consistent with congressional intent a comprehensive program for low-level nuclear waste disposal has been established. And we urge this committee's attention to the establishment of a uniform definition.

Second, several of the proposed compacts provide for States to adopt their own packaging and transportation standards. This could result in a cumbersome system of interregional requirements and it could jeopardize the safe and efficient movement of low-level nuclear waste throughout the country.

Further, any State requirement that is inconsistent or incompatible with Federal standards would intrude into an area preempted by Federal law. We would recommend, therefore, that Congress clarify by way of conditional consent or otherwise that its approval does not authorize States to promulgate packaging or transportation requirements inconsistent with or at odds with Federal provisions.

Third, the Policy Act provides that importation of nonregional waste may be prohibited after January 1, 1986. The Northwest compact, however, proposes to exclude nonregional waste after July 1, 1983, and we would support the condition that is contained in S. 247 and H.R. 1012, as already testified to here by others this morning, that providing for the import prohibition in the Northwest compact should be not until January 1, 1986.

In addition to the early import prohibition, the Northwest compact also permits the immediate discrimination against nonparty States in the form of what is called a certificate of compliance. This certificate to be issued by the State of origin would have to include certification that the shipment has been inspected and found to be in compliance with applicable Federal and State packaging regulations. This provision, we believe, is entirely unjustified from a health and safety perspective, and it would necessitate the establishment of additional inspection organizations by nonparty States or by the NRC, and it would result in costly and unnecessary duplication of existing NRC and Department of Transportation regulatory programs. This certificate of compliance would also require that the State of origin enter into a binding agreement to indemnify any party State for liability or expense resulting from accidental releases. However, not only are there many States with constitutional prohibitions on providing such indemnification, but to our knowledge, no State now has an available mechanism to provide such indemnification.

Thus, this requirement would operate to immediately prohibit the receipt of waste from generators in nonparty States.

Finally, a number of the proposed compacts, including the Southeast and Midwest compacts, impose restrictions on the exportation of low level nuclear waste from the regions after January 1, 1986. We do understand that these restrictions have been established out of a concern for insuring the economic viability that is necessary for the proper and efficient operation of regional facilities. The export of some wastes, however, beyond the date of July 1, 1986, could be justified for a variety of technical reasons. And, thus, we believe that any export restrictions imposed by any compact should be flexible and subject to appropriate and reasonable exceptions.

In concluding, we would like to join in Senator Gorton's suggestion in his introductory remarks on S. 247 calling for congressional consent for the Northwest compact, that Congress consider that compact in conjunction with at least one other compact before taking action.

We think that such an approach will provide a useful perspective which will foster nationwide coordination and uniformity and will help insure that there will be a satisfactory disposal site for all low level nuclear waste generated in this country.

Mr. Chairman, if there are any questions resulting from our comments, we would be glad to answer them. We have previously filed a prepared written statement.

The CHAIRMAN. Dr. Shoop, we would be glad to hear from you now. I believe you are with the American College of Nuclear Physicians.

Mr. SHOOP. That is correct. Thank you, Mr. Chairman. The American College of Nuclear Physicians and the Society of Nuclear Medicine compliment you and the committee for holding these hearings in a timely fashion, particularly in view of the January 1, 1986, exclusionary power date, and appreciate this opportunity to appear before the committee. We have submitted a complete statement for the record from which I will be taking excerpts to stay within the time limitation.

I am a practicing physician specializing in nuclear medicine and serve as president of the American College of Nuclear Physicians. Appearing with me on my left is Capt. William Briner, already known to you, who serves as the chairman of the government relations committee of the Society of Nuclear Medicine.

This society represents the nearly 11,000 scientists, technologists, and physicians, and others involved in the overall advancement of nuclear medicine with major interests in scientific, educational, and research activities, and in the low-level waste issue.

The American College of Nuclear Physicians represents 1,200 physicians whose primary activity is the practice of nuclear medicine. The college members are vitally interested and involved in the current activities relating to formation of interstate compacts and identification of regional sites for the management of low-level radioactive waste.

The nuclear medicine community is concerned about low-level radioactive waste because we are the primary users of radioactive material for diagnostic and therapeutic purposes. Approximately

100 million nuclear medicine procedures were performed in the United States last year. And that number is constantly increasing.

In view of the waste produced by the volume of nuclear medicine procedures, it is understandable that the nuclear medicine community is committed to the goal that adequate disposal facilities be made available.

Any delay in future site development or curtailment in the uses of the few sites now existing will have serious implications with regard to the delivery of essential medical services and may also have an inflationary impact on the cost of health care.

It is with these concerns in mind that we appear before you today and urge that the Congress keep pressure on the States to develop compacts or sites, hold to the January 1, 1986, exclusionary clause, and take action on interstate compacts as they are submitted for congressional approval. We also request that no compact be permitted to establish an exclusionary date for out of region waste that takes effect prior to the January 1, 1986, date, because if some States were permitted to do this before sufficient alternative sites were developed, the reduced availability of disposal space with its associated increase in cost would have important consequences for both the medical community and the patients served by them.

Why should nuclear medicine professionals be so concerned about radioactive waste management? It is because we know that nuclear medicine is one of the most cost-effective methods of medical diagnosis and believe it is in the public interest to ensure its continued availability. Also nuclear medicine techniques are the backbone of medical research, since in research practically every pathologic condition has been evaluated using radioactively labeled biochemicals which trace out the pathways of abnormal physiology.

In fact, a large percentage of the pharmaceutical products on the market today have been approved by the USFDA on the basis of research using radioactive duplicates. Low-level radioactive waste produced by medical facilities and their pharmaceutical suppliers consists of a wide range of materials: solids, liquids, laboratory animal carcasses, and contaminated handling materials.

Medical wastes represent approximately 15 to 30 percent of the total waste volume, but only a small fraction of the total radioactivity.

What are we doing about it? The College and the Society of Nuclear Medicine have a longstanding involvement in low-level waste management issues and have been in the forefront of activity at national and State levels. The college has established a speaker's bureau of approximately 100 physicians who have been trained to speak publicly about the important issues of nuclear medicine and low-level waste management.

The college and society recognize the concerns of the people in those States which currently have low-level radioactive waste management sites. Certainly, the medical community does not suggest that any one or even a few of these States bear the responsibility for managing all the low-level radioactive waste in the country.

Rather, the college and society strongly support a comprehensive and fair national policy for the development of regional, low-level radioactive waste management sites as envisioned in the Low-Level Radioactive Waste Disposal Act. Since the need for waste management is increasing with the growth of nuclear medicine and other nuclear technologies, it is important that the Congress act expeditiously on waste management matters such as the introduction of interstate compacts.

From our perspective as physicians and scientists, the actions of this committee will have a most significant impact on continued availability of critically important medical services. The college and society offer the expertise in nuclear medicine of their membership to the committee in whatever way this may be helpful.

Again, we appreciate this opportunity to offer our views and will be pleased to answer any questions. Thank you.

The CHAIRMAN. Thank you very much. I noticed in your statement you commented on nuclear materials being used in diagnosing so much in medicine.

Mr. SHOOP. That is correct.

The CHAIRMAN. They are also used a lot in cures are they not?

Mr. SHOOP. Nuclear medicine is used in some areas of treatment, but the primary utilization is for diagnosis.

The CHAIRMAN. Diagnosis. I was thinking it was used for treatment of some forms of cancer.

Mr. SHOOP. It is. It is, sir.

The CHAIRMAN. Now, I have a few questions here for Mr. Smith. Mr. Smith, what would be the practical effect on utilities and low level generators in general if some compacts adopted standards for transportation and disposal which were stricter than Federal regulations?

Mr. SMITH. Well, Mr. Chairman, I think that regardless how well intended such local restrictions might be, that the effect very likely would frustrate the intent of the Policy Act, which is to develop, first of all, the cooperation of the States in regions and then to foster interregional cooperation and then to insure that you do have uniformity and harmony between the States and the Federal Government. And as was testified earlier by another witness with respect to packaging and transportation, if packaging and transportation restrictions should be imposed on an ad hoc basis by the various States or various compacts, we do think that not only would it be more costly to handle the material, we think it would actually be likely to work against safety.

As the Department of Transportation witness testified earlier, from the standpoint of being able to recognize material in shipments, in the event of any emergency in emergency procedure usage, it is necessary to have standardization.

The CHAIRMAN. Mr. Smith, could you briefly summarize those areas in which uniformity or consistency is sufficiently important that conditions on congressional consent might be necessary?

Mr. SMITH. Yes, sir. I would be glad to do that. I think, first of all, the definition of low level waste material should be uniform and consistent, and I would refer to the definition most recently enacted by Congress, which is that in the Nuclear Waste Policy Act of 1982, which is Public Law 97-425.

Then, secondly, I think that Congress should consider conditioning its consent with respect to packaging and transportation provisions in these compacts so that they must be consistent with uniform Federal policy and not at odds with that Federal policy.

Then, I think with respect to the limitations upon exporting material from the regions or perhaps even from one State, if it should in effect become a de facto region, after January 1, 1986, that congressional consent should be conditioned upon some reasonable, flexible arrangement for necessary and practical exceptions to that.

I would think that those would be the three main areas. I mentioned earlier the specific problems with respect to the Northwest compact, of course, which deal with two items that are limited, as we now know it, to that situation.

The CHAIRMAN. Now, would you quickly summarize those points again? One point you make is that the definition of low-level nuclear waste should be consistent.

Mr. SMITH. Yes, throughout the country.

The CHAIRMAN. The second is that packaging and transportation regulations should be uniform?

Mr. SMITH. Packaging and transportation now is the subject of the Federal framework, going back to the Hazardous Waste Material Transportation Act of 1974, and there has evolved a body of regulatory law following that legislation which we think should be continued, but should have uniform Federal standards.

We think that——

The CHAIRMAN. For packaging and transportation.

Mr. SMITH. For packaging and transportation. That may not exclude entirely any regional compact dealing to some extent with packaging and with transportation, but we think the congressional consent could be conditioned on the Federal program being the primary, the dominant program, so that should there be any inconsistency then it is clear that Federal standards apply.

The CHAIRMAN. And your third point was?

Mr. SMITH. The limitation upon the export of low level waste material from a region after January 1, 1986. We think that any such restriction should be conditioned by Congress so that it allows sufficient flexibility to take care of the unknowns and developments in the future that may make it both practical and safe and cost efficient to have some material exported.

So we think there should be room for reasonable exceptions.

The CHAIRMAN. Yes; I was just about to ask you a question on that—whether the present compact provisions allowing regional commissions to authorize exports sufficiently addresses your concerns?

Mr. SMITH. I do not have those before me, but with respect to the two that I have read most recently, being the Northwest and the Southeast compact that is now proceeding through the legislature in South Carolina, I do not believe that those compacts explicitly provide for exceptions to be developed.

The CHAIRMAN. I believe in your statement you made, page 9, you said, "The export of waste, however, may be justified in some cases for technical reasons."

Mr. SMITH. Yes, sir.

The CHAIRMAN. Could you tell us what reasons?

Mr. SMITH. Well, one example that comes to my mind is in the case of the decommissioning of a facility. Now, it may be that there is some material that is in the facility that is decommissioned that simply is unique in that it is almost one of a kind, that it can be more readily and satisfactorily handled at some type of disposal facility that exists outside the region.

The CHAIRMAN. How do you suggest that that situation be handled? To give the Department of Energy the authority to approve such export?

Mr. SMITH. I believe that the Nuclear Regulatory Commission——

The CHAIRMAN. The Nuclear Regulatory Commission should have that power?

Mr. SMITH. Should have that power, yes.

The CHAIRMAN. I see. Now, Mr. Smith, what alternatives do you think are available to nonsited regions to provide for interim storage or disposal prior to new sites coming on-line?

Mr. SMITH. Well, of course, Mr. Chairman, it is important that we continue the momentum that has been built up, and as others have said, we do not feel it would be in the best interests of this program for the date of July 1, 1986, to be extended.

We think that much will be accomplished by holding to that date. But given the perhaps likelihood that one or two regions may not have satisfactorily resolved their problems and brought before Congress a compact that has been approved, I would think that where it has been demonstrated, first of all, that those regions have indulged in a good-faith effort to achieve a compact, that other regions would be willing to negotiate some interim basis to handle the material if indeed it could not be handled on an interim basis within the States themselves. It has been testified to by others this morning that the various States within regions that have not yet agreed upon compacts are going ahead with interim storage plans on their own.

The volume of the material is very, very small, and it would seem to me to be quite likely that interim storage, if necessary, on a State-by-State basis could be accommodated to for a short period of time after 1986 if we do not have all of these compacts in place.

But if they are not, then I think regional cooperation would take care of the overflow.

The CHAIRMAN. Dr. DeLong, how long can utilities store low-level waste at their reactor sites?

Mr. DELONG. Senator Thurmond, right now most utilities could have storage capabilities up to a period of about 4 or 5 years. Currently, the NRC approach to licensing low level waste storage facilities is only up to that period of time. Some utilities do have storage up to approaching 5 years. Others have less than that.

The CHAIRMAN. What steps are currently being taken by the utilities in the areas of waste incineration and reduction, and what effect might these activities have on the economic viability of the various compact regions?

Dr. DELONG. The utilities are monitoring the developments for waste incineration because it does represent a good opportunity for volume reduction. There are activities being sponsored by the Department of Energy which we are following very closely, and if those prove to be appropriate, they do represent an alternative that we can investigate.

But although they do represent opportunities to reduce the volume, whether or not this would cause an impact on the economics of the operation of regional disposal facilities, is somewhat difficult to determine. I think we as utilities feel that there are certain fixed costs that are involved in the operation of a disposal facility, a regional disposal facility, and they will have to be covered.

As we reduce volume, we may be able to reduce the costs somewhat, but there may be a minimum level of cost reduction available through that option.

The CHAIRMAN. Thank you. Dr. Shoop, I have some questions here I would like to ask you. Dr. Shoop, while I completely agree with your comments regarding the need to retain the 1986 exclusionary date, there is a substantial possibility that new sites will not be on-line by that date. What alternatives do you believe would be available for the period of time before new sites are operational?

Mr. SHOOP. For the medical facilities I foresee that storage within the medical facility would be possible for a period of time, perhaps as much as a year.

What I am more concerned about is where the radiopharmaceutical houses will store their waste because they do not have that kind of capability, and we do not have any radiopharmaceuticals to administer to the patients if they cannot produce them at the radiopharmaceutical manufacturer. And I am not prepared to answer what they would do with their waste.

The CHAIRMAN. Dr. Shoop, what capabilities do medical facilities have to store low-level waste onsite? For what period of time and what risk to public health and safety?

Mr. SHOOP. Most hospitals have basement rooms which are out of the traffic pattern which can serve as a low-level waste storage site for a significant period of time. In our particular institution we have one. We store waste there for approximately 8 months.

And most medical facilities could find such a location, I believe.

The CHAIRMAN. Dr. Shoop, do you foresee a need for certain types of low-level waste to be disposed of only at particular sites? For example, a site located in an arid climate?

Mr. SHOOP. No, sir, I do not. But I do think that there is a possibility for disposing of the liquid scintillation materials in such a way that we could use the stored energy in the hydrocarbons such as is being done in Texas, as Dr. Augustine mentioned, where we can actually generate energy, electrical energy or some other type of energy back out of that.

As a consequence of that, if everyone were to send their liquid scintillation vials to one particular location, a considerable amount of energy might be generated.

The CHAIRMAN. Thank you, Dr. Shoop. I think that completes my questioning.

I want to express my appreciation to all of you people who have testified on this matter. We appreciate your appearance here, and I am sure your testimony will be a great contribution to this committee's consideration of these compacts. We have only one witness left.

We will excuse you now, gentlemen.

[Statements supplied follows:]

PREPARED STATEMENT OF SHERWOOD H. SMITH, JR.

Mr. Chairman and Members of the Committee: I am pleased to have the opportunity to appear before you today and testify concerning the regional low-level nuclear waste disposal compacts being established pursuant to the Low-Level Radioactive Waste Policy Act of 1980 (Pub. L. 96-573).

I am Chairman and Chief Executive Officer of Carolina Power & Light Company and am appearing on behalf of the Utility Nuclear Waste Management Group (UNWMG), a group of 43 publicly owned and investor-owned electric utilities*/ which was formed in 1980 through the merger of two other utility groups, both of which had long been active in the field of nuclear waste management. I am also appearing on behalf of the Edison Electric Institute (EEI), the association of investor-owned utilities which generate approximately 77% of all electricity and serve 69,000,000 customers in the United States; and on behalf of the American Nuclear Energy Council (ANEC), which represents more than 100 organizations having an interest in nuclear power, including private, public and cooperatively owned utilities, manufacturers, architect-engineers, and a number of firms performing various nuclear fuel cycle activities.

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*/ Alabama Power Company; Arizona Public Service Company; Baltimore Gas & Electric Company; Boston Edison Company; Carolina Power & Light Company; The Cincinnati Gas & Electric Company; The Cleveland Electric Illuminating Company; Commonwealth Edison Company; Consolidated Edison Co. of New York, Inc.; The Detroit Edison Company; Duke Power Company; Duquesne Light Company; Florida Power Corporation; Florida Power & Light Company; Georgia Power Company; Gulf States Utilities Company; Houston Lighting & Power Company; Illinois Power Company; Iowa Electric Light & Power Company; Kansas City Power & Light Company; Kansas Gas & Electric Company; Long Island Lighting Company; Los Angeles, Department of Water & Power; Middle South Services, Inc.; Nebraska Public Power District; Niagara Mohawk Power Corporation; Northeast Utilities; Northern States Power Company; Pennsylvania Power & Light Company; Philadelphia Electric Company; Portland General Electric Company; Power Authority of the State of New York; Public Service Electric & Gas Company; Public Service Company of Indiana; Sacramento Municipal Utility District; SNUPPS; Southern California Edison Company; Texas Utilities Company; Toledo Edison Company; Union Electric Company; Virginia Electric & Power Company; Wisconsin Public Service Corporation; Wisconsin Electric Power Company; Yankee Atomic Electric Company.

Also with me today is Dr. Max M. DeLong. Dr. DeLong is Manager, Special Nuclear Programs, at Northern States Power Company and currently serves as Chairman of the UNWMG Low-Level Waste Working Group.

I would like to begin by expressing our appreciation to the Committee for its prompt and continuing attention to this important matter. In the last session of Congress, a major step was taken in the area of high-level nuclear waste disposal through passage of the Nuclear Waste Policy Act of 1982 (Pub. L. 97-425). Today, we are directing our attention to low-level nuclear waste disposal in the context of regional state compacts formed pursuant to the Low-Level Radioactive Waste Policy Act of 1980. The Low-Level Waste Policy Act, which I will refer to simply as the "Policy Act," acknowledges the responsibility of the states to provide for the disposal of low-level nuclear waste and encourages such disposal on a regional basis. We support this approach as an equitable and publicly acceptable course. Regional disposal is a significant improvement over the current system, whereby a few sites, located in Richland, Washington; Barnwell, South Carolina; and Beatty, Nevada, serve as hosts for the nation's low-level nuclear waste. This important legislation affects not only the nuclear generation of electricity, which produces about half of the low-level nuclear waste generated in the United States, but medical, educational and industrial activities as well. The regional compacting effort being considered here today is a crucial step in the process of assuring that the nation's low-level nuclear waste is disposed of in a safe, environmentally sound, efficient and equitable manner. We continue to encourage all of the states to act expeditiously in entering into regional compacts. If the process is successful, regional initiatives may prove to be an effective mechanism for addressing other areas of concern on a nationwide basis.

In the next two legislative sessions, there will be a great deal of activity in the low-level nuclear waste compacting area, with several regional compacts expected to come before Congress for its consent. The UNWMG, EEI and ANEC believe it essential that, when the various compacts are in place, they provide a mechanism that is capable of disposing of all of the nation's low-level nuclear waste. Disposal of such waste is a matter that transcends state boundaries. Questions involving such issues as the materials to be disposed of at regional facilities, access to those facilities and the respective rights and obligations of party states, non-party states, generators and shippers, require a systematic approach. Thus, one of the challenges before this Congress will be to assure that the various regional compacts can function together as an efficient, integrated, nationwide system for low-level nuclear waste disposal, consistent with the intent of the Policy Act.

To date, significant progress has been made in forming regional compacts which will contribute to an effective, national disposal program. This Committee has already conducted field hearings on the Northwest Compact, at which the UNWMG, EEI and ANEC also testified. In addition, the states themselves have recognized the underlying need for a coordinated approach, and that inter-regional cooperation and interaction will be required. This past November, a conference of regional compact negotiators was held in

Seattle which stressed the importance of communication and cooperation among the various regions. We commend the states for their efforts thus far to establish a workable low-level nuclear waste disposal program and are confident that those efforts will continue.

Although we continue to urge prompt state adoption of regional compacts, many of the compacts contain provisions which may not serve to enhance inter-regional coordination and cooperation. I would like to address a few of the most important of these provisions to which we believe Congress should direct its attention.

First, as presently drafted, the compacts do not provide a consistent definition of low-level waste. While several incorporate the definition utilized in the Low-Level Waste Policy Act others, such as the Northwest and Rocky Mountain Compacts, have adopted different definitions. The importance of consistency in defining low-level nuclear waste cannot be overemphasized. A consistent definition would help ensure, for example, that no particular form of low-level nuclear waste will be unacceptable for disposal at a regional facility. A uniform understanding of what materials are being considered should facilitate cooperation among the regions and help assure that, consistent with Congressional intent, a comprehensive program for low-level nuclear waste disposal has been established. We note in this connection, that Congress recently formulated a sound definition of low-level nuclear waste, in the Nuclear Waste Policy Act (Pub. L. 97-425), which would permit the low-level nuclear waste disposal program to keep pace with changing federal regulatory considerations, would provide inter-regional consistency, and would ensure disposal of all forms of low-level nuclear waste.

In addition to non-uniformity in defining low-level nuclear waste, several of the proposed compacts permit or require states to adopt their own packaging and transportation standards. States properly have a role in the regulation of packaging and transportation activities to the extent that such regulation is consistent and compatible with federal requirements. However, variations in packaging and transportation standards could result in a cumbersome system of inter-regional requirements, which would place an unnecessary burden on waste generators and shippers by rendering compliance more difficult, and could jeopardize the safe and efficient movement of low-level nuclear waste throughout the country. Furthermore, any state requirement inconsistent or incompatible with federal standards would intrude into an area preempted by federal law. Should changes in transportation or packaging regulation be deemed necessary in the future, the appropriate mechanism would be the amendment of existing federal standards, rather than piecemeal state or regional regulation. We do not believe that the Low-Level Radioactive Waste Policy Act was intended to provide authority for restructuring of the existing regulatory framework governing transportation and packaging of low-level nuclear waste. We therefore recommend that Congress clarify, by way of conditional consent or otherwise, that its consent does not authorize states to promulgate packaging or transportation requirements at odds with federal provisions.

Another issue, which only arises in the context of the Northwest Compact, is the question of when a compact region may exclude non-regional waste from its disposal facility. The Policy Act provides that importation of non-regional waste may be prohibited after January 1, 1986. The Northwest

Compact, however proposes to exclude non-regional waste after July 1, 1983. We support the condition contained in S. 247 and H.R. 1012, providing that the import prohibition in the Northwest Compact shall not take effect until January 1, 1986.

In addition to the early import prohibition, the Northwest Compact also permits immediate discrimination against non-party states in the form of a requirement that -- until such prohibition takes effect -- non-regional waste shipped into the region for disposal must be accompanied by a "certificate of compliance". This certificate, issued by the state of origin, must include a statement that the shipment has been inspected and found to be in compliance with applicable federal and state packaging regulations. Given the excellent safety record of low-level nuclear waste shipments to date, this provision is entirely unjustified from a health and safety perspective. In addition, separate inspection of every waste shipment would necessitate the establishment of additional inspection organizations by non-party states or the NRC. Furthermore, the requirement would result in costly and unnecessary duplication of existing NRC and DOT regulatory programs.

The "certificate of compliance" would also require that the state of origin enter into a binding agreement to indemnify any party state for liability or expense resulting from accidental releases. From our perspective, such a requirement is unnecessary due to existing insurance coverage. More basically, however, not only are there many states with constitutional prohibitions on providing such indemnification but, to our knowledge, no state now has an available mechanism to provide such indemnification. Thus, this requirement would operate immediately to effectively prohibit the receipt of waste from generators in non-party states. Congressional consent to such an immediate prohibition would be clearly inconsistent with the intent of the Policy Act. The indemnification provision would also duplicate shippers' existing, private insurance coverage.

Finally, a number of the proposed compacts, including the Southeast and Midwest Compacts, impose restrictions on the exportation of low-level nuclear waste from the regions after January 1, 1986. We understand that these restrictions have been established out of a concern for economic viability, necessary for proper and efficient operation of the regional facilities. The export of waste, however, may be justified in some cases for technical reasons. Thus, any export restrictions imposed by the compact regions should be subject to appropriate and reasonable exceptions.

In concluding, we would like to join in Senator Gorton's suggestion, in his introductory remarks on S. 247 granting Congressional consent to the Northwest Compact, that Congress consider that compact in conjunction with at least one other, before taking action. Such an approach will provide a useful perspective which will foster nationwide coordination and uniformity, and help assure that there will be a satisfactory disposal site for all low-level nuclear waste generated in the country.

Significant progress has been made by the states in formulating regional compacts and in beginning the process of efficiently disposing of the nation's low-level nuclear waste. In order to ensure that the final scheme results in a workable national program, consistent with the intent of the Low-Level Radioactive Waste Policy Act, we believe Congress should address the problems to which we have referred today.

PREPARED STATEMENT OF JON D. SHOOP

MR. CHAIRMAN, MEMBERS OF THE COMMITTEE, I AM DR. JON SHOOP, A PHYSICIAN SPECIALIZING IN THE PRACTICE OF NUCLEAR MEDICINE, AND PRESIDENT OF THE AMERICAN COLLEGE OF NUCLEAR PHYSICIANS (COLLEGE). APPEARING WITH ME IS CAPT. WILLIAM BRINER (RET.) WHO SERVES AS CHAIRMAN OF THE GOVERNMENT RELATIONS COMMITTEE OF THE SOCIETY OF NUCLEAR MEDICINE (SOCIETY), WHICH REPRESENTS NEARLY 11,000 PHYSICISTS, TECHNOLOGISTS, CHEMISTS, RADIOPHARMACISTS, PHYSICIANS AND OTHERS INVOLVED IN NUCLEAR MEDICINE. THE SOCIETY OF NUCLEAR MEDICINE IS DEDICATED TO THE OVERALL ADVANCEMENT OF NUCLEAR MEDICINE AND HAS MAJOR INTERESTS IN SCIENTIFIC, EDUCATIONAL AND RESEARCH ACTIVITIES AFFECTING NUCLEAR MEDICINE AND THE LOW-LEVEL WASTE ISSUE.

THE AMERICAN COLLEGE OF NUCLEAR PHYSICIANS REPRESENTS 1,200 PHYSICIANS WHOSE PRIMARY ACTIVITY IS THE PRACTICE OF NUCLEAR MEDICINE. THE COLLEGE MEMBERS ARE VITALLY INTERESTED, AND INVOLVED, IN THE CURRENT ACTIVITIES IN MANY STATES RELATING TO FORMATION OF INTERSTATE COMPACTS AND IDENTIFICATION OF REGIONAL SITES FOR THE MANAGEMENT OF LOW-LEVEL RADIOACTIVE WASTE.

THE COMBINED MEMBERSHIP OF THESE TWO ORGANIZATIONS IS THIS COUNTRY'S NUCLEAR MEDICINE COMMUNITY. WE APPRECIATE THIS OPPORTUNITY TO APPEAR BEFORE THE COMMITTEE TO DISCUSS LOW-LEVEL RADIOACTIVE WASTE MANAGEMENT.

THE COLLEGE AND THE SOCIETY COMPLIMENT THE COMMITTEE FOR ITS FORESIGHT IN HOLDING THESE HEARINGS IN A TIMELY FASHION, PARTICULARLY IN VIEW OF THE JANUARY 1, 1986 EXCLUSIONARY POWER DATE AS ESTABLISHED UNDER THE LOW-LEVEL RADIOACTIVE WASTE POLICY ACT WHICH ALLOWS STATES PARTICIPATING IN CONGRESSIONALLY-APPROVED INTERSTATE COMPACTS TO EXCLUDE OUT-OF-REGION WASTE.

THE NUCLEAR MEDICINE COMMUNITY IS CONCERNED ABOUT LOW-LEVEL RADIOACTIVE WASTE BECAUSE WE ARE THE PRIMARY USERS OF RADIOACTIVE MATERIAL FOR DIAGNOSTIC AND THERAPEUTIC PURPOSES. APPROXIMATELY 100 MILLION NUCLEAR MEDICINE PROCEDURES WERE PERFORMED IN THE UNITED STATES LAST YEAR, AND THAT NUMBER IS CONSTANTLY INCREASING. IN VIEW OF THE WASTE PRODUCED BY THIS VOLUME OF NUCLEAR MEDICINE PROCEDURES IT IS UNDERSTANDABLE THAT THE NUCLEAR MEDICINE COMMUNITY IS COMMITTED TO THE GOAL THAT ADEQUATE DISPOSAL

FACILITIES BE MADE AVAILABLE. ANY DELAY IN FUTURE SITE DEVELOPMENT AND/OR CURTAILMENT IN THE USE OF THE FEW SITES NOW EXISTING WILL HAVE SERIOUS IMPLICATIONS WITH REGARD TO THE DELIVERY OF ESSENTIAL MEDICAL SERVICES, AND WILL ALSO HAVE AN INFLATIONARY IMPACT ON THE COST OF HEALTH CARE.

IT IS WITH THESE CONCERNS IN MIND THAT WE APPEAR BEFORE YOU TODAY AND URGE THAT THE CONGRESS KEEP PRESSURE ON THE STATES TO DEVELOP ADDITIONAL SITES, HOLD TO THE JANUARY 1, 1986 EXCLUSIONARY CLAUSE AND TAKE ACTION ON INTERSTATE COMPACTS AS THEY ARE SUBMITTED FOR CONGRESSIONAL APPROVAL. WE ALSO REQUEST THAT NO COMPACT BE PERMITTED TO ESTABLISH AN EXCLUSIONARY DATE FOR OUT-OF-REGION WASTE THAT TAKES EFFECT PRIOR TO THE JANUARY 1, 1986 DATE CONTAINED IN THE LOW-LEVEL WASTE POLICY ACT. IF SOME STATES WERE PERMITTED TO DO THIS BEFORE SUFFICIENT ALTERNATIVE SITES WERE DEVELOPED THE REDUCTION IN AVAILABILITY OF DISPOSAL SPACE, WITH ITS ASSOCIATED INCREASE IN COST, COULD HAVE IMPORTANT CONSEQUENCES FOR BOTH THE MEDICAL COMMUNITY AND THE PATIENTS SERVED BY THEM.

WHY SHOULD NUCLEAR MEDICINE PROFESSIONALS BE SO CONCERNED ABOUT RADIOACTIVE WASTE MANAGEMENT? IT IS BECAUSE WE KNOW THAT NUCLEAR MEDICINE IS ONE OF THE MOST COST-EFFECTIVE METHODS OF MEDICAL DIAGNOSIS AND BELIEVE IT IS IN THE PUBLIC INTEREST TO ENSURE ITS CONTINUED VIABILITY. ALSO, NUCLEAR MEDICINE TECHNIQUES ARE THE BACKBONE OF MODERN MEDICAL RESEARCH, AND THE MAINSTAY OF THERAPY FOR CERTAIN THYROID DISORDERS.

WITH REGARD TO DIAGNOSTIC NUCLEAR MEDICINE THERE ARE TWO DISTINCT AREAS OF PRACTICE. DIAGNOSTIC IN VIVO, INCLUDES THOSE PROCEDURES IN WHICH SMALL AMOUNTS OF RADIOACTIVELY-LABELED DRUGS, KNOWN AS RADIOPHARMACEUTICALS ARE ADMINISTERED TO PATIENTS FOR ANALYTIC IMAGING PURPOSES. THAT IS, AFTER THE RADIOPHARMACEUTICAL HAS BEEN ADMINISTERED TO THE PATIENT THE DISTRIBUTION AND LOCALIZATION OF THE DRUG IS INDENTIFIED, BY SENSITIVE IMAGING EQUIPMENT, TO ESTABLISH THE PRESENCE OR ABSENCE OF DISEASE. RADIOPHARMACEUTICALS HAVE BEEN DEVELOPED TO EXAMINE THE BRAIN, LUNGS, LIVER, HEART, BONES, GALL BLADDER, THYROID GLAND, LYMPHATIC SYSTEM, AS WELL AS OTHER ORGANS. THESE PROCEDURES ARE NON-INVASIVE, NEARLY PAIN-FREE, AND DELIVER ONLY MINUTE RADIATION TO THE PATIENT WHICH IS FAR LESS THAN THE COMPARABLE X-RAY PROCEDURE.

DIAGNOSTIC IN VITRO ENCOMPASSES CERTAIN LABORATORY TESTS IN WHICH NO RADIOACTIVE MATERIAL IS ADMINISTERED TO THE PATIENT. INSTEAD, A SAMPLE OF SOME BODY FLUID, USUALLY BLOOD, IS COLLECTED FROM THE PATIENT AND REACTED WITH A RADIOACTIVE REAGENT. THESE TESTS ARE USED TO DETERMINE HORMONE LEVELS, THE PRESENCE OF HEPATITIS, PREGNANCY, BLOOD VITAMIN LEVELS, BLOOD DRUG LEVELS, CANCER ANTIGENS, THE PRESENCE OF DRUG ABUSE, AND IDENTIFICATION OF OTHER SUBSTANCES OF MEDICAL IMPORTANCE INCLUDING ENZYME LEVELS INDICATING THE PROBABILITY OF A PERSON HAVING EXPERIENCED A HEART ATTACK.

WITH REGARD TO RADIONUCLIDE THERAPY, LARGER AMOUNTS OF RADIOACTIVE DRUGS THAT ARE KNOWN TO HAVE A SPECIFIC LOCALIZATION IN A PARTICULAR PART OF A BODY ARE ADMINISTERED TO THE PATIENT FOR THE THERAPEUTIC AFFECT. AN EXAMPLE OF THIS TYPE OF PROCEDURE IS THE USE OF SODIUM IODIDE I-131 SOLUTION FOR THE TREATMENT OF THYROID CANCER AND SELECTED CASES OF THYROID OVERACTIVITY.

IN RESEARCH PRACTICALLY EVERY PATHOLOGIC CONDITION OF MAN HAS BEEN EVALUATED USING RADIOACTIVELY-LABELED BIOCHEMICALS WHICH TRACE OUT THE PATHWAYS OF ABNORMAL PHYSIOLOGY, ALLOWING FOR DEVELOPMENT OF SPECIFIC TREATMENTS AND DRUGS. IN FACT, A LARGE PERCENTAGE OF THE PHARMACEUTICAL PRODUCTS ON THE MARKET TODAY -- THE DRUGS FOR WHICH YOUR PHYSICIAN WRITES A PRESCRIPTION -- HAS BEEN APPROVED BY THE U.S. FOOD AND DRUG ADMINISTRATION ON THE BASIS OF RESEARCH USING RADIOACTIVE DUPLICATES.

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LOW-LEVEL RADIOACTIVE WASTE PRODUCED BY MEDICAL FACILITIES AND THEIR PHARMACEUTICAL SUPPLIERS CONSIST OF A WIDE RANGE OF MATERIALS: DRY SOLIDS (COMBUSTIBLE AND NON-COMBUSTIBLE); LIQUIDS AND VIALS; LABORATORY ANIMAL CARCASSES; AND CONTAMINATED HANDLING MATERIALS. SPECIFICALLY, SUCH WASTE CONTAINS THE RESIDUE FROM THE PREPARATION OF RADIOPHARMACEUTICALS, DISPOSABLE EQUIPMENT USED IN THE PREPARATION AND ADMINISTRATION OF SUCH AGENTS TO PATIENTS, UNUSED OR EXPIRED RADIOACTIVE PREPARATIONS, AND THE ABSORBENT PAPER, GLOVES, AND OTHER HANDLING MATERIALS WITH WHICH RADIOACTIVE SUBSTANCES HAVE COME IN CONTACT. MEDICAL WASTES REPRESENT APPROXIMATELY 15* TO

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*According to 1981 STATE-BY-STATE ASSESSMENT OF LOW-LEVEL RADIOACTIVE WASTE SHIPPED TO COMMERICAL DISPOSAL SITES (DOE/LLW) - National Low-Level Waste Management Program

30 PERCENT OF THE TOTAL WASTE VOLUME, BUT ONLY A SMALL FRACTION OF THE TOTAL RADIOACTIVITY.

THE IMPORTANCE OF NUCLEAR MEDICINE IN MEDICAL CARE

IN ADDITION TO THE EXCELLENT ANALYTIC RESULTS PROVIDED BY NUCLEAR MEDICINE PROCEDURES IT SHOULD BE NOTED THAT ALTERNATIVES TO THESE PROCEDURES WHERE THEY EXIST ARE USUALLY MORE INVASIVE, CARRY A GREATER RISK TO THE PATIENT AND/OR COST SUBSTANTIALLY MORE. FOR EXAMPLE, IF A NUCLEAR MEDICINE HEART FUNCTION STUDY COULD NOT BE PERFORMED THE ALTERNATIVE WOULD BE CARDIAC CATHETERIZATION. INCLUDING HOSPITALIZATION (REQUIRED FOR CARDIAC CATHETERIZATION BUT NOT NUCLEAR MEDICINE PROCEDURES) THE TOTAL COSTS WOULD APPROXIMATE 10 TIMES THAT OF THE NUCLEAR MEDICINE HEART STUDY.

ANOTHER EXAMPLE INVOLVED CANCER OF THE BREAST, THE COMMONEST CANCER IN WOMEN. AN UNFORTUNATELY LARGE PERCENTAGE OF THESE WOMEN ALREADY HAVE SPREAD OF THE CANCER TO THE BONES AT THE TIME THEIR BREAST LUMP IS DISCOVERED. IN MANY OF THESE WOMEN THE INVOLVEMENT OF BONE BY CANCER CAN ONLY BE DIAGNOSED BY A NUCLEAR MEDICINE STUDY. IF THIS NUCLEAR MEDICINE IMAGING PROCEDURE WERE NOT AVAILABLE MANY WOMEN COULD BE SUBJECTED TO DISFIGURING SURGERY UNDER THE MISCONCEPTION THAT CURE WAS STILL POSSIBLE. THE DEMONSTRATION OF TUMOR SPREAD BY THE NUCLEAR MEDICINE STUDY ENABLES PHYSICIANS TO INSTITUTE PROMPT ALTERNATIVE MEANS OF TREATMENT.

OTHER POPULATION GROUPS THAT WOULD BE SERIOUSLY IMPACTED BY REDUCTION OF NUCLEAR MEDICINE SERVICES WOULD BE THE POOR AND THE PATIENTS IN SMALL RURAL HOSPITALS, BECAUSE OF THE HIGH COST OF ALTERNATIVE DIAGNOSTIC TECHNIQUES SUCH AS CAT SCANNING. MANY HOSPITALS THAT SERVE THESE POPULATIONS DO NOT HAVE ALTERNATIVE MODALITIES AVAILABLE, THUS NUCLEAR MEDICINE SERVICES ARE CRUCIAL TO THE EFFECTIVE MEDICAL MANAGEMENT OF THEIR PATIENTS.

FURTHER, EXCEPT FOR THE AVAILABILITY OF LOW-LEVEL WASTE DISPOSAL SITES, A MEDICALLY NECESSARY RADIOPHARMACEUTICAL COULD NOT BE PRODUCED IN SUFFICIENT QUANTITY. WHILE MANUFACTURERS DO HAVE SOME STORAGE CAPABILITY, ANY REDUCTION IN THE AVAILABILITY OF EXISTING DISPOSAL SITES WOULD PRODUCE A RAPID SATURATION OF THIS CAPABILITY AND RESULT IN CURTAILMENT OF THE PRODUCTION OF

RADIOPHARMACEUTICALS. SUCH A SITUATION COULD OCCUR IN AS SHORT A TIME AS ONE TO SIX MONTHS, DEPENDING ON THE MANUFACTURER.

WHAT ARE WE DOING ABOUT IT?

THE COLLEGE AND THE SOCIETY HAVE A LONG-STANDING INVOLVEMENT IN THE LOW-LEVEL WASTE MANAGEMENT ISSUE AND HAVE BEEN IN THE FOREFRONT OF ACTIVITIES AT NATIONAL AND STATE LEVELS. THE COLLEGE HAS ESTABLISHED A SPEAKERS BUREAU OF APPROXIMATELY 100 PHYSICIANS AND SCIENTISTS WHO HAVE BEEN TRAINED TO SPEAK PUBLICLY ABOUT THE IMPORTANT ISSUE OF NUCLEAR MEDICINE AND LOW-LEVEL WASTE MANAGEMENT, INCLUDING THE RISKS AND BENEFITS TO THE PATIENT AND THE PUBLIC. GENERAL MISCONCEPTIONS ABOUT NUCLEAR WASTE MANAGEMENT HAVE CREATED AN ATMOSPHERE WHEREIN WE FEEL IT IS ESSENTIAL TO EDUCATE THE PUBLIC ON THIS ISSUE.

THE COLLEGE AND THE SOCIETY RECOGNIZE THE CONCERNS OF THE PEOPLE IN THOSE STATES WHICH CURRENTLY HAVE LOW-LEVEL RADIOACTIVE WASTE MANAGEMENT SITES. CERTAINLY THE MEDICAL COMMUNITY DOES NOT SUGGEST THAT ANY ONE, OR EVEN A FEW, STATES BEAR THE RESPONSIBILITY FOR MANAGING ALL THE LOW-LEVEL RADIOACTIVE WASTE IN THIS COUNTRY. RATHER, THE COLLEGE AND THE SOCIETY STRONGLY SUPPORT A COMPREHENSIVE AND FAIR NATIONAL POLICY FOR THE DEVELOPMENT OF REGIONAL, LOW-LEVEL RADIOACTIVE WASTE MANAGEMENT SITES AS ENVISIONED IN THE LOW-LEVEL RADIOACTIVE WASTE DISPOSAL ACT. SINCE THE NEED FOR WASTE MANAGEMENT IS INCREASING WITH THE GROWTH OF NUCLEAR MEDICINE AND OTHER NUCLEAR TECHNOLOGIES IT IS IMPORTANT THAT THE CONGRESS AND THIS COMMITTEE ACT EXPEDIOUSLY ON WASTE MANAGEMENT MATTERS SUCH AS THE INTRODUCTION OF INTERSTATE COMPACTS. FROM OUR PERSPECTIVE AS PHYSICIANS AND SCIENTISTS YOUR ACTIONS WILL HAVE A MOST SIGNIFICANT IMPACT ON THE CONTINUED AVAILABILITY OF CRITICALLY IMPORTANT MEDICAL SERVICES.

THE COLLEGE AND THE SOCIETY OFFER THE EXPERTISE IN NUCLEAR MEDICINE OF THEIR MEMBERSHIPS TO THE COMMITTEE, IN WHATEVER WAY THIS MAY BE HELPFUL. WE GREATLY APPRECIATE THIS OPPORTUNITY TO OFFER OUR VIEWS AND WILL BE PLEASED TO ANSWER ANY QUESTIONS.

The **Chairman**. We will ask Ms. Renee Parsons, if she is present, to come down. Ms. Parsons, I first want to express my appreciation to you for the assistance you gave us on my amendment to the high-level waste bill. You may proceed now.

STATEMENT OF RENEE PARSONS, LEGISLATIVE ASSISTANT, FRIENDS OF THE EARTH

Ms. **Parsons**. Thank you, Senator, very much.

The **Chairman**. We do have 5 minutes to go, but I am going to wait and hear you.

Ms. **Parsons**. I will hurry. I am a fast talker normally anyway.

I would like to thank you and your able staff for the foresight in holding these hearings.

In the interest of time, I will skip right to some issues that we see Congress might want to look at again as the compacts come before you for ratification. Most of the comments I have to make have been touched on to some extent this morning.

Friends of the Earth has supported the regional compact concept as an alternative to the use of the current three facilities that have been storing low-level waste. Ideally, however, we would prefer to see low-level waste stored at the generation location, as in the case of the commercial nuclear industry wastes at reactor sites.

The act authorized each State to be responsible for providing for available capacity for low-level waste generated within its borders. The act encourages but does not mandate that the States enter into regional compacts. The major question to be resolved is whether the regions without disposal facilities already in place can meet the January 1986 deadline specified in the act.

In responding to DOE's status report to Senate Energy Chairman McClure, many States disagreed with the Department's assertion that the compacting implementation could be achieved within the statutory timeframe.

It has been estimated that in a region where there is no existing site, a 5-year lead time will be required; 5 years to select a site, confirm its suitability, construct the site, and have it operational.

With complete implementation of all the compacts unlikely by that 1986 date—that is, having an operating facility in place by January 1986—it appears there may be some regions without an operational disposal facility. Even if only one region is without an operational facility by that date, contingency plans must be addressed by Congress immediately. One option, of course, is to extend the 1986 deadline to allow for adequate site selection processes.

Such schedule slippage might mean that the existing low-level waste facilities would continue to accept out of region wastes as well as being seen as encouragement to procrastinating States or regions. If Congress is not willing to enforce the 1986 date, then, so the argument goes, its commitment to another date and to regional concepts in general will be seen as soft.

One variation on that proposal might be to extend the deadline if that region can show that it is in good faith negotiating.

Yet another alternative would be to keep the nuclear industry generated low-level waste at reactor sites. The industry wastes, which is the predominant amount of waste generated could be stored in above ground casks or vaults on either a temporary or a long term basis. Such storage capacity could be made available and would limit the amount of handling and transportation risks involved.

Most medical wastes, which account for only 12 percent of all low-level waste generated in this country, lose their radioactivity relatively quickly and could be stored in barrels or drums at the generation location.

Another major issue that is being addressed differently by the various compacts is that of the establishment of follow-on disposal facilities; that is, the selection of the region's succeeding facilities. In order to alleviate political problems and possible public opposition as well as future problems, some compact States intend to set a limit on the life of the first facility. Such limited life, while perhaps facilitating establishment of that first facility, has the potential for creating a family of low level waste sites around the country.

While Friends of the Earth has taken no formal position on this aspect of the low-level waste issue, we are concerned about the proliferation of a series of radioactive waste disposal facilities nationwide. The Northwest compact, for instance, has not authorized a process for a second facility, but rather suggests minimizing the use of one party State as the host of such facilities.

The Rocky Mountain compact requires that any State generating 20 percent of that region's low-level waste may be eligible to become a future facility.

Without a consistent policy here, the potential exists for regions expanding or shifting each time a new site is to be chosen as a State looks for the best deal. For instance, we heard here this morning that the State of Wisconsin might withdraw and go out on their own if Illinois is not going to be the Midwest compact State.

While the act authorizes States to enter into compacts to dispose of low-level waste, most compacts are assuming management functions that extend their authority beyond simply disposal. The management concept gives the State the additional ability to reduce the volume of low-level waste generated and in need of disposal. We would support the States' interpretation of the act to allow them authority for management activities, especially those activities that focus on reducing the volumes of waste generated.

While the act and the NRC have both adopted the basic "what low-level waste is not" definitions, some compacts are adopting definitions of low-level waste that are not consistent with the act, and in most cases, more stringent than the act. The prospect of one region rejecting one type of low-level waste and another accepting the same material has a potential for creating a confused regulatory and political situation.

Most compacts do not adjust to emergency situations. The compacts have not—appear not to have anticipated emergency closure of their regional facilities or established contingency plans in such an emergency situation. We would urge establishment of such plans to identify contingencies in the event of a shutdown of the facility, including how and where waste would be stored in the event of such a shutdown.

Review of the compacts indicates the continued commitment to the shallow land burial concept. Six commercial facilities, all of which have used the shallow land burial technique, have had a history of trench overflow and migration of radionuclides. We would, however, encourage consideration of the use of above ground storage systems using casks or vaults.

Currently, at least two States, California and Texas, have not joined a regional compact. We would urge that the status of unaffiliated States be resolved. Such unaffiliated status raises questions whether a State has the right to exclude other States access to their facility without violating the interstate commerce clause of the Constitution, or in the case of California, when does a region have the right to exclude a State from its formation?

As compact negotiations continue, it is conceivable that other States, such as Wisconsin indicated this morning, may opt to store their low-level waste within their own borders.

Various compacts are also addressing regulatory issues in a variety of different ways. While the NRC and DOT provide the regulatory framework for packaging, transportation, and licensing of the compact's facilities, the regional compacts are establishing different, sometimes duplicative regulatory standards.

The recently adopted NRC rule allows the States to adopt more stringent standards than the rule itself. We support the States' ability to adopt those type of standards.

Lastly, we would suggest that Congress not rush to ratify compacts without an adequate opportunity to review and compare various compact's revisions. In the interest of minimizing legal and regulatory confusion, we would urge that most compacts, if not all, should be presented to Congress for some kind of comparative analysis.

Thank you.

The CHAIRMAN. Thank you, Ms. Parsons. Ms. Parsons, do you suggest onsite storage as the most attractive option to avoid a difficult situation in 1986, I believe?

Ms. PARSONS. Yes.

The CHAIRMAN. What regulatory requirements would be applicable to a generator which wished to store low-level waste onsite, and what lead time would be required to establish a centrally located warehouse?

Ms. PARSONS. The NRC indicated this morning that the licensees could store their low-level—could continue storing low level waste onsite for the next 4 to 5 years. We are not aware that there is any outstanding requirement, any other application process that they would need to go through to be able to do that.

In terms of an existing warehouse that could be used for storing some of the medical waste, GAO has suggested that such warehouses, simply cement warehouses be used, they could be either leased or rented and that casks or vaults be stored within those warehouses, too, on a temporary or longer term basis to store low-level waste.

They are not facilities that would have to be specially constructed.

The CHAIRMAN. What leadtime do you think it would take to set up one of those warehouses?

Ms. PARSONS. It would be a matter of simply finding a warehouse and given these economic times, I do not think that would be too terribly difficult; I think the point being that such a warehouse would not have to be constructed; simply a regular kind of facility could be used with vaults and casks moved into that warehouse for use. So I would see that certainly accomplishable by the 1986 deadline.

The CHAIRMAN. Ms. Parsons, do you feel that Congress, possibly through conditioning its consent to the compacts, should establish a uniform definition of low-level waste and a uniform system for treatment of Federal generated waste?

Ms. PARSONS. Yes. We support that concept, that there will be a rather untenable situation if we have various compacts adopting different definitions, storing different materials that another region will not store.

The CHAIRMAN. Also, should Federal generators have access to State sites?

Ms. PARSONS. Federal generators defined as Federal R&D facilities? If we are talking about Federal R&D type facilities, like a Veterans' Administration hospital, for instance, I would say yes, they should.

The CHAIRMAN. For instance, the NIH and the Department of Defense.

Ms. PARSONS. I think generally we would support the storage of the wastes at the commercial sites.

The CHAIRMAN. Should they have to have separate sites; or should they be allowed to use the sites within their regions; or should they be allowed to go to the nearest site if it saves them money?

Ms. PARSONS. I think they should be allowed to use a site within their region. And I think the issue for us is that those defense wastes generated be held to the same standards as commercial low-level waste. And whether or not in fact they end up being stored at the same site is not quite the issue, at least from my point of view, but rather that the same standards, environmental standards be applied to those same wastes.

The CHAIRMAN. Now, on balance, do you feel the implementation of a regional disposal system will result in better protection of the public health and safety and of the environment?

Ms. PARSONS. Yes. We, as I mentioned earlier, we have supported the regional concept, certainly as a preferable option to the use of the three existing low-level facilities. Although, ideally I would have to say that we would prefer even more so to see the commercial low-level waste stored at reactor sites; that the medical waste, much of which decays in a short period of time, up to 6 months, can be taken care of separately; and that if, in fact, those two areas were dealt with, there would really be very little incentive at that point then to establish regional facilities.

The CHAIRMAN. I want to thank you very much, Ms. Parsons, for your appearance here. Do not hesitate to give us an opinion on any matters affecting the environment. I am very much interested in protecting the environment and protecting the health of the people.

Ms. PARSONS. Thank you, Senator. We appreciate your support.

The **Chairman**. Thank you very much.

[Statement of Ms. Parsons follows:]

PREPARED STATEMENT OF RENEE PARSONS

My name is Renee Parsons, Legislative Representative with Friends of the Earth. Friends of the Earth is an environmental organization which does research, lobbying and is involved in policy debates on a broad range of environmental issues from clean air, clean water to energy issues and nuclear arms control to transportation, endangered species and pesticide issues.

I would like to thank Chairman Thurmond for this opportunity to raise some issues that we see as the states begin to adopt their regional compacts to store low level radioactive wastes. While all but one of these compacts is in draft form, we will try to touch on emerging problems that Congress may need to deal with and be aware of before ratifying any compacts.

Low level radioactive wastes have been referred to as the neglected stepchild of the nuclear age we live in. While the national debate rages over the Federal government's activities regarding the disposal of high level commercial radioactive wastes, the storage of low level wastes have received very little attention until recent years. Low level wastes have historically been defined by what they are not and, as such, represent the broadest category of radioactive wastes. If they are not spent fuel rods, high level wastes from reprocessing, transuranic wastes from the defense program or by-products such as uranium mill tailings, these wastes are, therefore, considered to be "low level". Because of the fuzzy distinction in defining these wastes, highly toxic radioisotopes such as plutonium, strontium, and cesium have, in the past, been disposed of as low level wastes. The term "low level" has been and still is a misnomer.

The Federal government has been generating quantities of low level wastes since the early 1940's from the research activities of the Manhattan Project. Defense wastes from the 40's and 50's were either put in metal containers or cardboard boxes in shallow land burial sites or dropped in the ocean by the Navy. Subsequent studies off the California coast near the Farallon Islands have shown elevated radiation readings in cod and other fish. The Environmental Protection Agency, a few years ago, found radioactive americium in fish caught off the Eastern seaboard in the Atlantic Ocean.

It wasn't until the 1960's, however, that the disposal needs of low level wastes began to receive attention. By that time, the commercial nuclear electric industry, which generates low level wastes in their every day operation, had a significant quantity of wastes to be disposed of. These wastes consist of radioactive tools, clothing and other materials used in reactor maintenance. In addition, more highly radioactive items such as filters, resins, and sludges contaminated while cooling the reactor's fuel rods and reactor parts such as pumps and pipes are defined as "low level". These materials are variously contamined with such radioisotopes as Cobalt 60, Cesium 137, plutonium and strontium. According to a 1980 analysis done for the Department of Energy by EG&G Idaho, a full 52.5% of low level wastes generated in the United States are from the commercial nuclear industry.

Other sources of low level wastes are hospitals and the medical establishment as a result of cancer therapies and x-rays, 12%; the industrial sector including radiopharamaceuticals, watch and clock/radio dials, 33.5%; and non-government research, 2%.

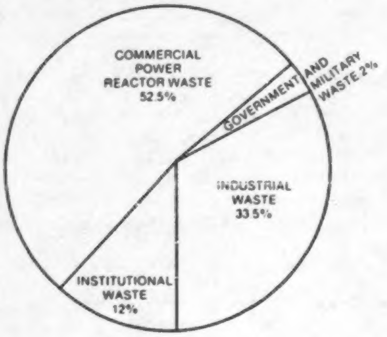
TABLE 1. TOTAL LOW-LEVEL RADIOACTIVE WASTE DISPOSAL AT COMMERCIAL FACILITIES (1980)

Source	No. of Installations/ Licenses	Volumes, in Cubic Meters
Commercial Power Reactors	72 inst.	60,013m
Medical Facilities Universities/	6,604 lic.	14,044
Industry	10,803 lic.	38,168
Government and Military	19 inst.	2,013
TOTALS*	17,478	106,766

* Not the sum of the volume from each source. The discrepancy is due to the use of information of varying degrees of accuracy from multiple sources with some double counting of waste.

Source: *The 1980 State-by-State Assessment of Low-Level Radioactive Waste Shipped to Commercial Disposal Sites* (LLWMP-11T). National Low-Level Waste Management Program, E.G. and G. Idaho, Inc., June 1982.

FIGURE 1. TOTAL LOW-LEVEL RADIOACTIVE WASTE DISPOSED OF AT COMMERCIAL FACILITIES (PERCENTAGES BY SOURCE)



Commercial Sites Established

With recognition of a growing problem of storage space for these wastes, the first commercial site was opened in 1962 and two more the following year until a total of six facilities were operational. The shallow land disposal technique used by all these facilities over the years proved to be less than satisfactory. Trenches are dug in varying sizes - from 1000 feet long to 17 - 21 feet deep. The trenches are not lined with any special migration-resistant material. Containers holding the waste, either in steel or metal drums or wooden or cardboard boxes, are piled and stacked into the trenches. Trenches, such as Barnwell's, are packed with a 5 foot top layer of clay to retard rainwater from infiltrating the trenches and creating overflow of contaminated water ormigration of radionuclides. This clay is then covered with top and grass seed. The grass is then monitored for cracks or fissures in the trench cover.

In order to better understand the history of the problems that led to establishing regional compacts, I would like to briefly outline the history of these six facilities:

	Open	Closed
Beatty Nevada,	1962	still operational
Maxey Flats, Kentucky	1963	1977
West Valley, New York	1963	1975
Hanford, Washington	1965	still operational
Sheffield, Illinois	1967	1979
Barnwell, South Carolina	1971	still operational

Beatty, Nevada - This site was originally licensed by the Atomic Energy Commission, operated by Nuclear Engineering and is located on state-owned land. Operation of the Beatty site resulted in the first criminal sanctions against a commercial operator. NE, to its credit, reported employee theft of various pieces of contaminated equipment such as hand tools, plywood, a shipping container being used as a livestock trough and even a radioactive cement mixer. The Nevada site has been closed a number of times since 1979 due to unenforced packaging regulations and the State Department of Health's determination of existing health and safety violations. In 1980, Beatty received 12% of the nation's low level wastes.

Maxey Flats, Kentucky - This site currently contains nearly 5 million cubic feet of waste. When this site was chosen, the AEC warned in 1962 that it could not assure "the geologic suitability of the proposed burial site to assure there would not be transport of radioactive materials through groundwater to surrounding streams." By 1973, the trenches had overflowed and State health inspectors found plutonium had migrated more than half a mile away. The State legislature, in response to continued migration of radionuclides, levied a 10¢ a pound fee which resulted in the permanent shutdown of the facility.

West Valley, New York - This facility was originally established at the request of the State and during its life, accepted more than 22 million cubic feet of low level wastes. In early 1975, rainwater broke through the top of the trench cover and carried contamined water to the Cattaragus Creek which drains into Lake Erie. Nearly 2 million gallons of water was pumped out of the trenches and treated before being disposed of again in Cattaragus Creek. The facility's operator, Nuclear Fuel Services, has announced its desire to abandon the facility but has been prevented from doing so by a state-initiated court order.

Sheffield, Illinois - Although amounts of tritium had migrated off this site, this facility closed after filling its more than 3 million cubic foot capacity. When the operator, Nuclear Engineering, attempted to expand, the country denied the necessary permit thus blocking continued operation.

Hanford, Washington - This facility is on Federal land which is leads to the state and subleased to the operator, Nuclear Engineering. Currently, the facility contains over 1 million cubic feet of waste. Hanford in 1980 received 23% of the nation's low level radioactive waste.

Barnwell, South Carolina - This facility is the largest of the six containing more than 10 million cubic feet of waste. In 1978, Brookhaven National Laboratory survey found significant levels of radioactive cesium, cobalt and manganese in water pumped from the Barnwell trenches. In 1980, Barnwell received 65% of the nation's low level radioactive waste.

Low Level Waste Radioactive Policy Act Adopted to Resolve Crisis

The 1979 crisis at all three remaining sites created the political climate which led to enactment of the Low Level Radioactive Waste Policy Act of 1980. In March, 1979, the Governor of Nevada shut the Beatty site after a fire broke out on a truck carrying wastes into the site and a second truck shipment was found to be leaking radioactive liquid. Later that year, the Governor of Washington, finding similar lax enforcement of regulations, closed the Hanford facility. The Governor of South Carolina's response was a curtailment of the volume of shipments to the Barnwell site by half. The Governors of all three sites, siting "serious and repeated disregard for regulations" wrote to the Federal Government demanding that its existing regulations be enforced if their states were to continue receiving radioactive materials. With the addition of large volumes of low level wastes from the Three Mile Island clean-up, the three Governors felt it was not appropriate that their states bear the entire burden of storing all the nation's low level radioactive wastes. The Governors, while encouraging generators of low level wastes to develop regional sites, held the trump card of closing their sites at any time. On December, 22, 1980, Congress adopted the Low Level Radioactive Waste Policy Act of 1980.

While Friends of the Earth did not oppose the LLRSPA and we do support the concept of regionalization as a preferred alternative to the current situation. However, in order to reduce transportation risks associated with radioactive wastes, we would rather endorse at-reactor storage of the nuclear industry's low level wastes. The remaining low level wastes, which are of lesser radioactivity, could either be stored at their generation location until decay renders them safe as in most medical wastes or, as GAO has identified, industrial wastes could be stored in centrally-located warehouses. This at-reactor storage option has not been given the serious consideration it merits and we would urge that in view of the tenuous nature of most of the compacts, such a discussion would be useful.

The LLRWPA, which passed both House of Congress with no opposition, authorized each state to be responsible for providing for available capacity for the low level wastes generated within its own borders. The Act encourages, but does not mandate, that states enter into regional compacts. Most states, however, have chosen to organize into regions as suggested by theAct and draft compact agreements to establish procedures by which the region and the region's facility will operate.

COMPACT GROUPINGS & LEGISLATIVE STATUS AS OF NOVEMBER 29, 1982

Legislative Status: Introduced in House (IH). Introduced in Senate (IS). Passed in House (PH). Passed in Senate (PS). Ratified, Signed by Governor (R).

Midwest	Northwest	Central States	Rocky Mountain	Southeast (4)	Northeast	Mid-Atlantic
Illinois	Idaho(R)	Minnesota*	Colorado (R)	Georgia (R)	Vermont	Virginia* (R) (1)
Indiana (IH)	Washington (R)	Kansas (R)	Arizona	Florida (R)	New Hampshire	Delaware*
Iowa*	Oregon (R)	Oklahoma	New Mexico	Tennessee (R)	Maine	Maryland*
Kentucky*	Utah (R)	Iowa*	Wyoming*	Alabama (R)	Connecticut	North Carolina*
Michigan (PH/IS)	Alaska	Nebraska*(2)	Nevada	North Carolina*	Massachusetts	Kentucky*
Minnesota*	Hawaii (R)	Arkansas		South Carolina (R)	Rhode Island	West Virginia
Missouri*	Wyoming*	Louisiana (R)		Mississippi (R)	Pennsylvania	D. C.
Nebraska*	Montana (5)	Missouri* (IS)		Virginia (R) (1)	New Jersey	Puerto Rico
North Dakota*		North Dakota*			New York	U. S. VI
Ohio					Maryland* (3)	
South Dakota					Delaware* (3)	
Wisconsin						
Kansas*						
Virginia*						
Delaware*						
Maryland*						

Compiled by the "Radioactive Exchange"

*Denotes states participating in more than one region.

Texas and California continue to pursue an independent course of action.

(1) Virginia has been admitted to the list of eligible states for the Southeastern Compact.

(2) Nebraska's Senate has passed a resolution recommending that the state join the Central States Compact, and legislation to ratify the compact is expected for the 1983 session.

(3) Accepted as members for dissussion phase.

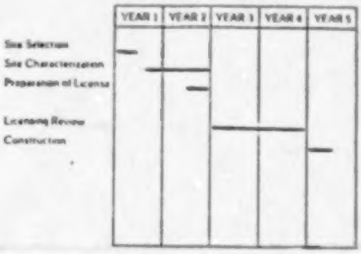
(4) The Southeast Compact has been changed and must be reapproved by each legislature.

(5) Montana has joined the Northwest compact under an executive order. The legislature is expected to ratify the agreement when it convenes.

According to the LLRWPA, after a region has adopted a compact through their individual state legislatures, they must then be ratified by Congress. After January 1, 1986, any regional compact may restrict use of their facility from accepting non-party wastes. Adoption of the 1986 date was seen, at time of enactment, as the motivating force to ensure that all the states had acted expeditiously and responsibly. Further, conformance to the 1986 date would allow the three existing low level facilities to legitimately refuse to accept any but their own region's waste. Two years later, however, the regional compacts are far from complete. The regions most advanced in their compact negotiations are, not surprisingly, the two regions with already-existing sites -- the NW compact with Hanford as the identified site and the SE compact with Barnwell expected to be that region's site. The NW compact was introduced in January, 1983 for Congressional action and the SE compact is expected by early summer. The Rocky Mountain Compact appears to be near ready for Congressional action with Beatty identified as the site for another few years and the second facility to be located in Colorado.

The fate of the other compacts, however, is far from certain. A major question to be resolved is whether the remaining regions without disposal facilities already in place, could meet the January, 1986 deadling specified in the Act. In responding to the DOE's July, 1982 Status Report (DOE-NE 0045) to Senate Energy Committee Chairman McClure, many states disagreed with the Department's assertion that the compacting process and implementation could be achieved within the statutory timeframe. We would agree with that assessment. It has been estimated that in a region where there is no existing site, a five year lead time will be required. The five year schedule is required to select a site, confirm its suitability, construct the facility and license its operation. With ratification of the NE and MW compacts to be the most unlikely, it appears there may be some regions without an operational disposal facility by the 1986 date. Even if only one region is without an operational facility by that date, contingency plans must be addressed by Congress immediately. While the Act itself does not offer any alternatives, Congress and the NW and SE compacts must grapple with this thorney issue for it is the basis for the success of the regional compact concept.

NEW SITE DEVELOPMENT SCHEDULE



There are a number of possible options if the 1986 date cannot be met. One option, of course, is to extend the 1986 deadling to allow for adequate site selection, licensing and construction time. Such schedule slippage would mean that the three existing low level waste facilities would continue to accept out-of-region wastes. The NW compact has offered a possible solution by agreeing to receive out of region wastes by a 2/3 vote of the NW party states.

The disadvantage of this approach is that it is seen as encouragement to procrastinating states or regions. That is, if Congress is not willing to enforce the 1986 date, then, so the argument goes, its commitment to another date and to the regional compact concepts, in general, will be seen as soft. One variation on that proposal might be to extend the deadline if that region can show that it is, in fact, negotiating in good faith. An allowance to slide the date could be linked to agreed-upon criteria. For instance, if that region has all the necessary state ratifications but merely needs an extension for licensing and construction time.

Another alternative which the GAO has mentioned is the use of existing Federal low low level facilities. However, since those facilities store defense-related low level wastes, DOE has raised the spectre of "national security" implications as an inhibition against their use.

Yet another alternative would be to keep nuclear industry generated low level wastes at reactor site. Industry wastes, which are the predominant amount of wastes and predominant in its radioactivity, could be stored in above ground casks or vaults on either a temporary or long term basis. Such storage capacity could be made available and would limit the amount of handling and transportation risks involved. Most the medical wastes, which account for only 12% of all low level wastes generated, lose their radioactivity in 60 days to 6 months. Contaminated material such as gloves, syringes and clothing can be stored in barrels or drums at their generation location until they lose their radioactivity and then discarded as trash.

Another option is the use of centrally-located warehouses to store non-nuclear industry wastes on a temporary basis until a new regional facility is available. Such a proposal, if applied on a real need basis, has some merit. If used as a temporary alternative to a regional facility, it will simply duplicate the handling and transportation risks associated with low level radioactive wastes.

As I mentioned earlier, Friends of the Earth endorses the at-reactor storage as the preferred option to alleviate another crisis situation in 1986. While that option may not be greeted with enthusiasm by the nuclear industry, we think it is feasible and practical. As a second choice option, there would appear to be no alternative to extending the 1986 deadling. We would recommend such an extension by linked with strict requirements to be applied to still-negotiating regions.

Another major issue that is being addressed differently by the various compacts is that of establishment of a follow-on disposal facility. That is, selection of a region's succeeding facilities. In order to alleviate political problems and possible public opposition as well as future problems as experienced in the 1979 crisis, some compact states intend to set a limit on the life of the first facility. Such a limited life, while perhaps facilitating establishment of the first facility, has the potential for creating a family of low level waste sites around the country. While one can appreciate a state's perspective of not wanting to assume such a burden for infinity there will obviously be the necessity of repeating all the site selection, licensing and construction decisions again.

While Friends of the Earth has no formal position on this aspect of the low level waste issue, we are concerned about the proliferation of a series of radioactive waste facilities. The NW Compact, for instance, has not authorized a process for a second facility but rather suggests "minimizing the use of any one party state as the host of such facilities". The draft of the Rocky Mountain Compact authorizes closure at Beatty in the near future and a second facility to be located in Colorado. The Region also requires that any party state generating 20% of that region's low level waste may be eligible to become a future facility. The NE Region authorizes its Commission to designate, by a 2/3 vote, a host state. The Commission shall not exercise its authority unless the party states have failed to voluntarily pursue development of such a facility.

Ideally, if Federal policy is to be effective and efficient, adoption of a consistent policy should be encouraged. Without some consistent guidelines here, the potential exists for regions disbanding or shifting each time a new site is to be chosen.

The provisions of the LLRWPA give very little guidance or criteria for the participating regions or states. A review of an analysis prepared for the National Conference sponsored by the NW Compact Committee last November indicates the differences among the regions and how they approach various issues. The document indicates a wide variety of approach and concerns on the part of the regions. While the Regions share some concerns, there are also different parochial interests and different solutions to those issues. Congress, therefore, has before it the unwieldy job of deciphering the differences in each compact, determining if the compacts are in compliance with the Act and, if not, proposing legislative changes that may be necessary.

While the tenuous status of the draft compacts and their complex nature make it difficult to fully assess all the potential problems, we would like to point out some conflicts or inconsistencies that may need to be addressed in order to establish a credible national policy.

* While the LLRWPA authorizes states to enter into compacts to dispose of low level wastes, most compacts are assuming management functions that extend their authority beyond the disposal authority. Such management functions include such activities as the generation of wastes, transportation, and waste volume reduction. The management concept gives the

state the additional ability, for instance, to reduce the volume of low level wastes generated and in need of disposal. We would support the states' interpretation of the Act to allow them authority to management activities especially those activities that focus on reducing the volumes of waste generated.

* While the Act and the NRC have both adopted the basic what-it-is-not definition, most compacts are adopting definitions of low level waste that are not consistent with the Act and, in most cases, more stringent than the Act. For instance, the NW compact has identified a 10 nanocurie limit on transuranics while the draft NE compact has exempted all transuranics and all Federally generated wastes. (Such government entities as Veterans Hospitals would, therefore, be precluded from using commercial facilities.) The prospect of one region rejecting one type of low level waste and another accepting that same material has the potential of creating a confused regulatory and political situation.

* Most compacts do not address potential energy situations. History has shown that the six low level facilities have had a spotty record of operations. Most compacts have not anticipated emergency closure of their regional facility or established contingency plans in such an emergency situation. We would urge establishment of such plans to identify contingencies in the event of shutdown of the facility including how wastes will be stored in the event of shut a shutdown.

* A review of the compacts indicates a continued commitment to the shallow land burial concept. The six commercial facilities, all of which used the shallow land burial technique, have had a history of trench overflow and migration of radionuclides. Recent adoption of the NRC's "Licensing Requirement for Land Disposal of Radioactive Waste" rules are a step in the right direction. We would, however, prefer that the use of above ground storage systems using casks or vaults be encouraged.

* Section 2(4) of the Act excludes a full range of atomic energy defense activities from application of the Act. Such activities exempted include the naval reactor program, defense materials production and all DOE defense related activities. While figures for the volume of waste generated by these activittes are not public information, Friends of the Earth would urge that Congress not neglect the existence of these wastes because of dubious "national security" issues they raise but rather make a commitment to establish a program to store those wastes in an environmentally-acceptable manner.

* Currently, at least two states (California and Texas) have not joined a regional compact. We would urge that the status of unaffiliated states be resolved. Such an unaffiliated status raises whether such a state has the right to exclude other states access to their facility without violating the interstate commerce clause of the Constitution. Or, in the case of California, does a regional compact have the right to exclude a state from its region. As compact negotiations continue, it is conceivable that other states may opt to store their low level wastes within their own borders. The Act, as currently written, does not address unaffiliated states.

* The variouscompacts are also addressing regulatory issues in a variety of different ways. While the NRC and DOT provide the regulatory framework for packaging, transportation and licensing of the compact facilities, the regional compacts are establishing different regulatory standards. The NW Compact in particular allows each party state to adopt varying regulations. While the recently adopted NRC Rule allows the states to adopt more stringent standards than the Rule itself, we believe a consistent policy here important to a successful program.

In summary, we would suggest that Congress not rush to ratify compacts without an adequate opportunity to review and compare compact provisions. In the interest of minimizing legal and regulatory confusion, we would urge that most, if not all of the compacts, should be presented to Congress for such a comparative analysis.

Friends of the Earth endorses the concept of storing the nuclear industry's low level wastes at reactorsite in above ground storage facilities either for the short or long term. At-reactor storage is especially attractive especially pending resolution of the 1986 deadline.

The **Chairman**. And I believe that concludes the hearing, so we now stand adjourned. We have an organized crime hearing here starting at 1 o'clock, which is not very long from now.

[Whereupon, at 12:50 p.m., the committee was adjourned.]

APPENDIX

Additional Submissions for the Record

CALIFORNIA
RADIOACTIVE MATERIALS
MANAGEMENT FORUM

Jean Parker,
Administrative Director
P. O. Box 40279
San Francisco, CA 94140
(415)647-5909

Alan D. Pasternak, Ph.D.
Technical Director
455 Capitol Mall, Suite 380
Sacramento, California 95814
(916)447-1827

February 28, 1983

Honorable Strom Thurmond,
United States Senator
Chairman, Committee on the Judiciary
Dirksen Senate Office Building, Room 244
United States Senate
Washington, D. C. 20510

Dear Senator Thurmond,

The California Radioactive Materials Management Forum respectfully requests permission to submit the following comments for the record of the Senate Judiciary Committee's hearing on March 2, 1983 concerning S. 247, a Bill granting the consent of Congress to the Northwest Interstate Compact on Low-Level Radioactive Waste Management.

The California Radioactive Materials Management Forum is a technical support group formed in 1982 and composed of educational, research, medical, industrial and utility interests that are concerned with the safe management of radioactive materials. Our concern is focused on the common need for waste disposal capacity not currently available in California. To insure that services and activities using radioactive materials can continue operating and provide direct and indirect benefits to our citizens, the members of the Forum, through educational and informational programs, work together to help secure a safe low-level radioactive waste disposal facility in California and to assure that adequate facilities for management and disposal of low-level radioactive wastes will continue to be available to the state's generators prior to the operation of a disposal facility in California. A brochure is enclosed with this letter which lists some of the Forum's member organizations and officers.

Generators of low-level radioactive waste in California are dependent on the disposal facility operated by U. S. Ecology Corporation in Hanford, Washington. We are therefore concerned that the provisions of the Northwest Interstate Compact would exclude low-level radioactive waste from non-member states, such as California, well in advance of the January 1, 1986 date established by the Congress in the Low-Level Radioactive Waste Policy Act of 1980, Public Law 96-573. Such early exclusion would be accomplished both directly and indirectly through the compact's provisions.

We appreciate that the authors of S. 247 have addressed the provisions of the proposed compact which would establish July 1, 1983 as the date by which low-level waste generated outside of the region comprised of the party states may be excluded. Section 3.(a) of S. 247 provides that Article IV, paragraph (2) of the compact ("No facility located in any party state may accept low-level waste generated outside of the region comprised of the party states, except as provided in Article V.") shall not take effect until January 1, 1986. S. 247 thereby nullifies Article VI, paragraph (3) which would establish July 1, 1983 as the effective date of Article IV, paragraph (2). S. 247 thus deals effectively with those provisions by which the compact would directly establish an early exclusion date.

However, should the Congress grant consent to the Northwest Interstate Compact with only the change specified in Sec. 3(a), a similar early exclusion date would take effect indirectly through the provisions of Article IV, paragraph (3), and in particular through subparagraph (D) which require that until paragraph (2) of Article IV takes effect, low-level waste generated outside of the party states may not be accepted unless it is accompanied by a certificate which contains (among other things), "A binding agreement by the state of origin to reimburse any party state for any liability or expense incurred as a result of an accidental release of such waste during shipment or after such waste reaches the facility." We believe that the California Constitution prohibits the state from entering an agreement for indemnification as would be required by the compact. Thus the compact provisions would achieve indirectly the establishment of an exclusion date prior to that provided for in the Low-Level Radioactive Waste Policy Act of 1980.

We respectfully request that the Congress not grant consent to those provisions of the compact which, as outlined above, either directly or indirectly, permit the exclusion of low-level radioactive waste from a region prior to the date specified in Public Law 96-573.

The members of the California Radioactive Materials Management Forum desire to work cooperatively, and want the State of California to work cooperatively, with our neighbors to assure safe management and disposal of low-level radioactive waste. We have sponsored and are supporting bills in the California Legislature whose provisions will lead to the establishment of a low-level radioactive waste disposal faciility in California as soon as possible. The proposed legislation provides that where mutually beneficial interstate agreements can be entered into between California and other states or between California and compacts, the availability of California permanent disposal facilities, when operational, to such other states and compacts may be among the provisions of such interstate agreements. Our Forum will work vigorously to achieve enactment of these provisions.

We recognize and appreciate that California generators have, for many years, been able to use the disposal facilities in Hanford, Washington. We hope that these facilities will continue to be available while serious efforts are underway to establish a disposal facility in California. We want to advise this Committee and our neighbors in the Northwest of these efforts and of our desire to work cooperatively for the benefit of all our citizens.

Sincerely,

Horace H. Hines

Horace H. Hines, Chairman

Alan Pasternak

Alan Pasternak, Technical Director

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